MASSAGE

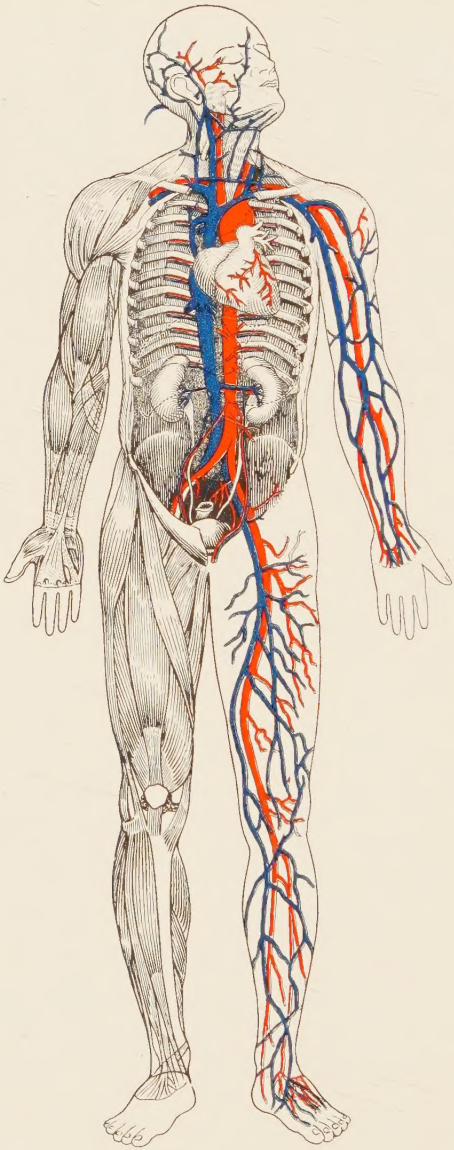
FOR NURSES AND BEGINNERS

By MAUDE RAWLINS

Digitized by the Internet Archive
in 2025

https://archive.org/details/massage0000unse_b2a8

A TEXTBOOK OF MASSAGE
FOR NURSES AND BEGINNERS



ANATOMICAL CHART

A TEXTBOOK OF

MASSAGE

FOR NURSES AND BEGINNERS

BY

MAUDE RAWLINS

Instructor of Massage to Nurses at St. John's Hospital, Brooklyn; Long Island College Hospital, Brooklyn; St. Mary's Hospital, Brooklyn; Flushing Hospital, Long Island; Flower Hospital, New York; Jewish Hospital, Brooklyn; Norwegian Lutheran Deaconesses' Home and Hospital, Brooklyn; Fifth Avenue Hospital, New York; Middlesex General Hospital, New Brunswick, New Jersey; St. Peter's General Hospital, New Brunswick, New Jersey; Muhlenberg Hospital, Plainfield, New Jersey; Mount Vernon Hospital, Mount Vernon, New York; St. Catherine's Hospital, Brooklyn.

ILLUSTRATED

ST. LOUIS
THE C. V. MOSBY COMPANY
1930

COPYRIGHT, 1930, BY THE C. V. MOSBY COMPANY

(All rights reserved)

Printed in U. S. A.

Press of
The C. V. Mosby Company
St. Louis

PREFACE

To my readers, students and many former pupils, who have so encouraged me during my long period of teaching by their eager interest and cooperation, full recognition is due, for they have enabled me to maintain my enthusiasm for massage, until I can say that my belief in massotherapy is far greater now than when I began more than thirty years ago. This is a long, long period to uphold ideals, unless the subject has grown to be a part of one's very being—as it has with me.

It must be thoroughly understood at the start that I am not attempting a scientific treatise on massotherapy. That has already been done by many very able advocates in most of the European countries, as well as by a few here in America. I have made free use of their teachings and have gained many ideas from their writings and have thus been able to present a broader aspect of the subject to my pupils.

The New York State Board of Nursing requires sixteen hours of practical instruction in massage. There is no attempt to make nurses proficient in this line; they are taught just enough to enable them to do their duties more acceptably in the

sick room. Their hands must be trained and made supple to enable them to rub their patients properly. They must be taught how to administer their rubbing movements either to stimulate or to soothe the sufferer; they must ease patients who are uncomfortable from casts, splints and bandages; they must know when and why massage of any description is advisable, or the reverse.

A short history of massage is outlined, showing the antiquity of the art, proving it is not mere rubbing to be done by any one. But even with this simple outline of the work, scientific truths must be presented without being clothed in technical terms. Consequently, there are very few medical names given. The effort has been to present just exactly what and how I have given the instruction to my students. Orthopedics has been mentioned but no attempt made to teach this subject, although great stress has been laid upon the manner of using the hands in deformities, after breaks, in stiffness of joints and conditions of loss of muscle and nerve power, as well as the correct manner of using the hands in the sickroom. The sixteen hours of training are inadequate to do more than touch upon the bare outlines of so vast a subject.

Margaret Palmer in her book *Lessons on Massage* said, "Just mere rubbing is not sufficient," and Dr. Monell said, "The six months' training usually given is totally inadequate."

The New York State Nursing Department realizes and respects the fact that massage requires a special training.

Only a very superficial outline is attempted here to show the value of passive massage in conjunction with joint movements, heat, water, electricity and any other means which call for a more prolonged training than is attempted or desired for nurses.

An episode, very gratifying to me, occurred just after the war. While I was taking a walk, a woman in a district nurse's uniform spied me from the opposite side of the street. She crossed over, shook hands, told me in which camp she had served during hostilities, and mentioned some eight or ten different nurses from as many different schools. She said that upon comparing notes, they found they had all had the same instruction. She wished to express their gratitude to me for all they had been able to do for the soldiers. What glorious compensation for one too old to serve personally! Those nurses had received their instruction long before the United States had awakened to the need of mechanical treatments for fractures and general orthopedic conditions. The result of this need has been the adoption of the physiotherapy department. In all of our large hospitals expensive and complicated machinery has been installed, but there are still many conditions in which only the trained hand can function, for

man has not yet been able to invent any machine so sensitive and delicate as the human hand.

About 1895, hospitals here and there in the United States conceived the idea that a few lessons in massage might be of value to nurses; so massage was adopted and six hours were devoted to the subject. As time went on, more and more hospitals added this short course to their curriculum. The hours were gradually increased to eight, then ten, where they remained until the close of the war when the New York State Nursing Department made it a compulsory, instead of a selective, course and demanded sixteen hours of elemental training in practical massage.

Looking back over the past thirty years from the crude beginning to the present, it is amazing to note the advance. Many of the hospitals now depend entirely upon the physiotherapy department for all training of their nurses. That is an injustice, and the fact will soon be realized, for the nurse is trained for bedside duties, such as convalescence, maternity and postoperative work, which she cannot get in the clinic.

In the long ago, demonstrations were given on convalescent patients when occasionally some of the doctors who were broadminded enough to acknowledge that they did not understand the practical side of massage would attend some of these demonstrations. Now all lessons are given on members of the class. Each nurse must not

only see, but do, and feel the different manipulations; all of which enable her to understand just how much can be endured or is needed, and also the great need of training the hands.

Massotherapy needs specialists, as do all other branches of the medical art. There is plenty of room at the top in this as in all other callings. Anything that is worth doing at all is worth doing well, especially on human beings.

Special credit is due to Michael A. Geiger, who has so ably illustrated the different movements by his drawings from life.

MAUDE RAWLINS.

CONTENTS

	Page
CHAPTER I	
Public Opinion	15
CHAPTER II	
History	19
CHAPTER III	
Science of Massage	25
CHAPTER IV	
Theory of Massage	28
CHAPTER V	
Terms	40
CHAPTER VI	
Effleurage	41
CHAPTER VII	
Stroking	47
CHAPTER VIII	
Pétrissage	50
CHAPTER IX	
Kneading	52
CHAPTER X	
Rolling-Kneading	55
CHAPTER XI	
Friction	58
CHAPTER XII	
Fulling	60
CHAPTER XIII	
Wringing	62

Page

CHAPTER XIV
Tapotement or Percussion 63

CHAPTER XV
Vibration 65

CHAPTER XVI
General Massage 70

CHAPTER XVII
Convalescence 92

CHAPTER XVIII
Headaches 105

CHAPTER XIX
Chronic Constipation 108

CHAPTER XX
Breasts 111

CHAPTER XXI
Orthopedics 123

CHAPTER XXII
Babies and Children 128

CHAPTER XXIII
Rheumatism 132

CHAPTER XXIV
Emergencies 135

ILLUSTRATIONS

Fig.		Page
	Anatomical chart (color plate)	Frontispiece
1.	Stroking with the straight hand	48
2.	Pétrissage or kneading	53
3.	Shows use of both hands on upper arm	56
4.	Vibration over distended bladder, ovaries, pit of stomach and nerves	66
5.	Abdominal vibration with flat hand over umbilicus or sigmoid flexure	68
6.	Shows stroking down over the sternomastoid muscles	78
7.	Shows first position of hands on abdomen over the colon	80
8.	Shows second position, in kneading of the transverse colon	81
9.	Shows third position, as hands meet at splenic flexure	82
10.	Wringing of the abdomen	84
11.	Vibration of the liver	87
12.	Shows position of patient and masseuse for most of the massage of the back	99
13.	Describes the rolling-kneading movement as a sedative	101
14.	Stroking the back	103
15.	Friction on the forehead	105
16.	To soften the breast	112
17.	To express milk	114
18.	Shows proper manner of holding arm to flex or extend the elbow	125

A TEXT-BOOK OF MASSAGE FOR NURSES AND BEGINNERS

CHAPTER I

PUBLIC OPINION

The idea most generally accepted is that any and all rubbing is massage. There is no greater mistake; for, while promiscuous rubbing will stimulate the blood circulation and often give good results, it must not be confused with scientific massage. There are still people who feel that any one who is strong, has good health, and is fairly intelligent, can massage successfully. We feel very confident that those same people would not employ the old "Sairy Gamp" stamp of nurse, and yet they will employ the untrained person for massage.

Occasionally a muscularly strong person meets with an accident, breaks some bones, and while waiting for the bones to knit, is obliged to remain physically quiet; such a person will necessarily suffer general stiffness and great discomfort because of the inactivity. Under such conditions strong massage, given by a vigorous, cheerful

person, who exerts strength while kneading and stroking, and perhaps adds some percussion over the remainder of the body, will accomplish all that is necessary to relax the tired, stiff muscles, and to limber up the joints.

This form of masage may be just as valuable in such cases as that performed by the blind men of Japan.

The last half century has ushered in an era of progress in every calling. There is a demand for efficiency, and efficiency does not grow on bushes to be plucked by any one in passing. Efficiency demands study, work, practice and intelligence.

The person without a thorough knowledge of human anatomy should not be trusted to give massage over the heart or abdomen.

Different forms of paralysis respond readily in numerous instances, but unless the cause is known, it is better to procure advice and special instruction. Little children, victims of infantile paralysis, derive great benefit from a short massage treatment, repeated frequently and regularly. Too much massage can be disastrous over the paralyzed, atrophied and weakened muscles and put too great a strain upon them, just at the time when assistance is required to aid the muscles to function.

Some time ago, a fairly intelligent man complained because two of his friends who had both been treated by massage did not equally recover. He could not understand that the one had been

unfortunate enough to suffer a stroke of apoplexy, while the other had received only an injury, both men being left paralyzed. With time, care and treatment the injured man recovered; while the other man made only a partial recovery. He felt the masseur had neglected the one through lack of interest or for financial reasons. According to his understanding, both were alike, since both men had been paralyzed. Then why should the one recover and not the other?

This is evidence of the need of a thorough education in the technic of massage to produce the desired results in varying conditions, and a thorough knowledge of the possibilities and limitations of the treatment. Without such knowledge, massage cannot be comprehended. For example, pressure is advisable in acute nerve pain, but all stimulating movements, such as percussion or vigorous kneading, are contraindicated, as such treatment will be liable to increase the suffering. Centripetal stroking is derivative and relieves pain by lessening the pressure of the blood in painful areas.

These are points seldom understood by the layman, who feels that because a vigorous rubbing helped some friend, any heavy rubbing, if continued long enough, will always give the desired relief.

The question is often asked, "Is massage good for rheumatism?" As there are many types and

as many causes for rheumatism, it is impossible to answer that question satisfactorily. We expect to secure good results in muscular rheumatism, but in all the other forms each case needs to be studied as to cause, demonstration, degree, and length of time of ailment. Then such methods are followed as can reasonably be expected to give satisfactory results from the given data. No special formula will reach or cure all.

The public, as well as the masseuse, must be educated as to the value of massage. The massage student must understand the theoretical, technical and practical phases of massotherapy and enough of pathology to apply massage intelligently.

CHAPTER II

HISTORY

Massage is a science, not a fad of the times. It is the oldest known remedial agent; as old as the hills, the water, the sun, and the air we breathe; and because so old, it is often ignored or flouted.

The first known records of massage are from the Chinese, 3000 B. C., which are in the British Museum. Next we hear of massage among the Japanese, about 1000 B. C., and the South Sea Islanders. Both evidently took it from the Chinese. The Greeks, Romans, Egyptians, Turks, Persians and others are known to have practiced a primitive form of massage.

A motion picture has been shown lately which depicted the massage as practiced by the natives in the South Sea Islands. There were several scenes; one showed the natives invigorating an exhausted shipwrecked man; in another, they resuscitated a youth from drowning. Some of the movements were identical with those practiced today. Massage is still prevalent in the South Seas and known positively to be in use on Danger Island, where the life of one person was saved by massage administered by a native.

The blind men of Japan are credited with being adepts in massage. While their crude methods are still employed, the training for scientific massage now requires four years in that country.

Hippocrates, in 460 B. C., said that "rubbing can bind a joint that is too loose and loosen a joint that is too rigid," also that "rubbing can 'make flesh' and cause parts to waste." He believed that all physicians should learn to rub. In addition, we now know that massage can either stimulate or soothe the nervous system.

At the beginning of the Christian era, Celsus, a Roman physician, advised frequent use of friction in the sun, daily, as well as rubbing, for chronic pains in the head, and also for any paralyzed limb.

Galen, A. D. 130, ordered the gladiators to be rubbed until their bodies were red, and then anointed. Today we have our athletes rubbed down and massaged. Julius Caesar had himself pinched daily to get rid of neuralgia.

Ambrose Pare, A. D. 1575, described gentle, medium and vigorous friction and the effects of each, and "that dislocated joints should be moved, this way and that" in order to resolve the effused fluids so as to facilitate reduction.

Two hundred years ago the French used massage extensively, and from that time on, the different countries have studied and practiced massage.

Hoffman recommended the king of Prussia in 1700 to have rubbing and exercise.

While massage has been practiced more or less in Europe for centuries, it was not until the winter of 1813 and 1814 that the Royal Central Institute of Stockholm, Sweden, was established for scientific massage. Peter Henry Ling, a fencing master, realized that the movements which he made when training his pupils to fence improved his own physical condition. He then studied the reason, with the result that he formulated what is known as the Swedish movements, and he added and systematized the passive movements of massage. He was not the originator of massage, but he systematized it and divided the different movements into active, passive and resistive.

John Andrew Peters, in his book *Manipulation or Massage,* tells of the valuable work done by John Beveridge, who was born in Dunfermline in the year 1819. He was trained for trade but by accident witnessed an old nurse manipulating for a severe sprain. He became interested and from then on studied manipulative art in his leisure time and gratuitously treated any person who cared to try his treatment. He finally gave up his business to follow the precarious calling of a masseur. As his practice became heavier, he moved to Edinburgh in 1849. While he never qualified as a medical man, he studied anatomy and physiology (a thorough knowledge of which

he considered indispensable). His success was phenomenal, and he soon had to employ five assistants. Naturally, he had to perform most of the work personally, with the result that he broke down and two years later died (in 1865). Of course, his treatments were considered quackery by the medical profession, but this did not check him, and his two sons and others carried on his work. John A. Peters became one of his disciples and has done his best to place massage on a legitimate footing. He believes that Beveridge was the first authority to systematize massage.

Stockholm was the first authorized seat of training for scientific and medical gymnastics, which accounts for the often heard term of "Swedish massage".

In 1860 Dr. Mezger of Amsterdam revived massage and practiced it on a scientific basis, at which time he cured the then Danish crown prince of what had been considered a chronic joint affection. Professors von Mosengeil, Berghman, and Halleday, who were his pupils, practiced massage from 1860 to 1874.

Previously to the efforts of these men, the massage that had been practiced had been mostly crude; although Mr. Grosvenor, an English surgeon of Oxford, became famous by his success in curing stiff joints by massage. About that time Mr. Balfour of Edinburgh treated rheumatism,

gout and sprains by different massage movements in the early nineteenth century.

At present we have much valuable literature upon this subject from the pens of Drs. Stretch Dowse, W. Murrell, S. Eccles, Tibbits, Copestake, A. Creighton Hale, MacKenzie, J. A. Peters, Buckotz, McMillan, Kleen, Hartwell, and many others, all giving greatly needed information, which should be studied by students of massage.

Now let us come to our American authorities. We have Douglas Graham of Boston, the pioneer there; S. Weir Mitchell of Philadelphia, who in 1877 introduced massage into the sickroom. He became internationally known for his treatment of neurasthenia. Dr. Lovett of Boston introduced his system of muscle training to correct the effects of infantile paralysis after the terrible epidemic of that disease among innumerable children in 1916. He has since died. He has left writings and followers; the former to enable us to study his work, and the latter to carry on the work.

Massage and medical gymnastics have been extensively used in orthopedic and surgical conditions for some time, even here in the United States, but the late war has given a greater impetus to this branch of mechanical treatment than before, as may be recognized by the adoption of a department of physiotherapy in most hospitals.

As the different forms of mechanical and

manual treatments are being brought forward, there is chaos in the minds of many people; but massage is the basic principle of all the treatments. Massage is movement, and movement means life.

A textbook of massage by L. L. Despard, an English woman, published in 1911 and well illustrated, and another by James B. Monnell, an Englishman, published in 1917, are both well worth studying.

We hear of the massage done in the Turkish baths; that sort of treatment may often be of value to those who are muscularly tired, but it is not scientific massage and is not suitable for the sickroom or clinic; as seldom, if ever, does the operator understand the anatomy of the human body. The same may be said in regard to the massage given on the athletic field. These varieties have their place, but they are not what is needed in the sickroom.

CHAPTER III

SCIENCE OF MASSAGE

Movement means life. The living seed in the ground grows or moves to reach perfection and full fruition. Every bird, beast, fish or human being develops through movement, but it has taken man's brain power to develop and understand and use movements to the benefit of humanity.

Botany and chemistry have taught him how to use the different herbs and chemicals to produce certain results under certain conditions; other needs have responded to the knife by the removal of diseased organs and tissues. Many times neither of these methods gives desired results; then massage is resorted to, for manipulations are movements and stimulate tired nature by giving a helping hand at a critical moment.

Water, which is also as old as time, has not gone out of date. Sometimes water is used hot, sometimes cold, sometimes fresh, sometimes containing salt, inside and outside the body. Man has learned to use water in many ways, besides drinking from the wayside spring. Water is often used alone, but frequently in conjunction with massage.

What power is greater than light? As water and light are both powerful and necessary agents for life, so we find many different forms of light used to aid the human body that is deprived of pure sunlight. All three, water, light and movement, have been scientifically studied and used for the benefit of mankind. Massage is just one of these powerful agents, and it should be just as thoroughly studied, understood, and used as either of the others. We can drown in water, we can be burned by too much light, and we can be exhausted by too much movement. Each agent can be used to excess and undo what good a regulated quantity of it may accomplish.

Massage is the power to repair by movement the complicated machine known as the human body.

Movement or exercise causes exaggeration of vital action and induces greater intensity, for it quickens the pulse and respiration and raises the body temperature, as everyone instinctively realizes. It is an accepted fact that every man, woman, child or animal, when cold, will begin to exercise, to warm up, as they express it. But rest quiets down all functions and lowers the temperature. These facts prove that the mere act of causing muscular contraction and expansion must affect the blood circulation, as well as the lymphatic and nervous systems, and have direct bearing on the heart and lungs and also

the brain, as the improved quantity and quality of blood supplies greater warmth and nutrition to the entire body.

Since massage is the power to repair thorough knowledge of this human machine, we must study this human mechanism thoroughly.

The heart is the motor and pumps the arterial blood through the arteries to every part of the body; accompanying the arteries we find veins the duty of which it is to carry the depleted blood back to the heart.

The circulation rate through the body as a whole is determined by the output of the heart per minute, which is largely dependent upon the ventricular systole, and partly upon the ability of the heart to deal with this inflow, by transferring the blood from the venous to the arterial side of the vascular system. The increased venous inflow to the heart during exercise, though aided by the more vigorous respiratory movements, is due mainly to the mechanical action of the active muscles which drives the blood back to the heart. In this way the muscles act as a second pump and with the combined action of the heart drive the blood into the arterial circulation. This is the first principle of massage.

CHAPTER IV

THEORY OF MASSAGE

Massage is a scientific manipulation of the soft tissues of the body, by means of which the blood circulation, the lymphatic and nervous systems are stimulated to a more rapid reoxygenation of the blood and the elimination of body waste by systematized stroking, kneading, wringing, fulling, percussing and vibrating. Several things are effected:

1. Blood circulation is improved with increased nutrition.

2. Body warmth is increased and skin condition is improved.

3. Nerves can be either soothed or stimulated as needed.

4. Waste matter is more rapidly eliminated.

5. Adhesions of soft parts are broken down.

6. Swelling and thickening of tissues are reduced.

7. Contracted tendons are stretched.

Massage is not a "cure all", but when indicated is a very valuable adjunct; however, when contraindicated, it may prove dangerous. Massage is often employed as a placebo.

It is absolutely necessary for the student of massage to understand the theory thoroughly. A mere knowledge of rubbing is not sufficient. (1) A general working knowledge of the human body must be acquired to do even the simplest movements; this means a study of the anatomy of the bony structure or skeleton, of all the large muscles or muscle groups which work in unison, according to the location and function, of where they begin and where they end. Then there must be studied in turn (2) the large arteries and large veins, the kind and quality of blood in each, and the general routes of the blood; (3) the lymphatic system, how and why it must be stimulated; (4) the nervous system. The student must have (5) as thorough a knowledge as is obtainable of the location, size and function of each of the organs contained within the bony frame of the torso; (6) a general knowledge of pronounced pathologic conditions, to enable the masseuse to understand which movements are likely to produce the best results; as, for instance, she must omit violent percussions in all inflammatory conditions and heavy work on the very young, very old and very weak.

When these points have been mastered, the beginners or nurses who are receiving this short

course in rudimentary massage can begin to study the technic, which is essential to aid them in being of more service to their patients.

True massage will often ward off an illness by stimulating the venous and lymphatic circulations. The centripetal stroking and kneading cause the muscles to contract and then to relax, and so empty out the veins and lymphatics in the area being acted upon. This very contracting and expanding motion squeezes the veins and lymphatics and forces the venous blood and lymph toward the heart, sending forward the poisons and waste which are eliminated through the heart and lungs and tissues more steadily by the hastened circulation, leaving room for the sucking up of the better blood to replace what has been exhausted. The more steadily the products of waste, poisons and disease are thrown off, the less opportunity for them to accumulate and set up a diseased condition in the body.

A person mentally and physically tired is liable to prove good breeding ground for disease germs, which will lurk in the system and multiply rapidly. He who complains of being tired and generally miserable will often benefit by a thorough massage, not necessarily harsh or of an hour's duration, but sufficient to compel all large muscles to perform their normal action. The impetus is given, not by the nervously tired and exhausted muscles, but through the hands of

the second person which relieve the nervous tension, mental exertion and concentration, and so allow the muscles to relax, and the muscles rest while the circulation is stimulated to continue its flow.

Deep breathing should always be encouraged, breathing from the bottom of the abdomen naturally, that is, rhythmically. Often people when advised to breathe deeply exert themselves to fill the lungs and then suddenly and forcefully exhale. That is all wrong.

A good general rule is a mental count while inhaling: when the full inhalation has been accomplished, hold the breath for two beats, then exhale with the same number of counts as when inhaling; hold the breath two counts again before repeating the first effort of inhaling. The average count is eight, two, eight and again two, but sometimes this is too great an effort; under such circumstances, one should count six, two, six, two. This deep abdominal breathing is very stimulating to the intestines and is a great impetus to digestion and increased appetite, as well as a powerful factor in aiding the system to rid itself of the impurities and accumuluation of waste, through the bowels and bladder.

At first this regular breathing may prove a little difficult, but with practice it will become automatic. When walking alone, out in the open air, it can be practiced.

In all cases of lowered vitality pay close

attention to the excretory organs. Keep the kidneys and especially the bowels working regularly. Massage of the abdomen must be done properly by a person who understands the anatomy of that part, or harm rather than benefit may result.

All nurses are required to rub their patients. They are being taught to do so to get the best results for their patients with the least exhaustion for themselves. When the nurse starts to rub, let her face her patient so that her own arms are parallel with those of her patient's. Start with effleurage on the arm or leg, which is lying at rest, relaxed. The nurse uses both hands, which are also relaxed, her fingers and thumb held together, not stiffly but in a soft flexible mass; both hands are laid lightly but firmly over the joint of the limb; she begins gently to stroke up; keeping in close contact with the muscles, she very gently and slightly increases the pressure over the belly of the muscle and decreases the pressure at the origin. She must not lose close contact with the part being stroked, but gently cling or hug the muscles as her hands return to the first position. Though I have described this stroking or effleurage movement on the limb, the same method is applied all over the body. Effleurage is the first and principal movement in massage and often is designated as rubbing. When applied in the manner described, it first stimulates the capillary

circulation, which in turn helps to stimulate the venous circulation; it also slightly aids the lymphatics, and as a sequence it mildly accelerates the arterial circulation, which in turn increases nutrition, while at the same time it soothes the sensory nerves by that clinging or gentle hugging of the muscles by the soft muscles of the nurse's hands, which must work rhythmically. The nurse does all the work, the patient gains the results. The patient has been passive and has accepted this minute general stimulation, without any effort of her own or the need of either thinking or acting for herself. Such rubbing is very different from that which is usually considered the rubbing of massage. There is no time rule; every case is a separate study. The old idea of an hour's steady work has been proved bad in most conditions, for a little gentle stimulation acts as a tonic, while a long treatment may be exhausting.

The late Dr. Weir Mitchell computed a full body massage was equal in results to the exercise of a three-mile walk; consequently, judgment must be exercised in administering massage, and even in applying a light effleurage, for we must not overtax the patient's strength.

Friction is best understood to mean light, circular rubbing by the cushions of the ends of the fingers or the large muscles of part of or the whole hand, given first around, then over tender and swollen tissues to stimulate the absorption

of the excess of the fluid, to relieve pain and swelling, to prepare the area for other and deeper treatment.

In every instance, no matter what the condition of the patient or what the cause requiring massage, great care and precision should be exercised; careless or jerky movements must be avoided. Always use the cushions of the fingers or hands. Even when small areas are to be treated, use the soft pads of the fingers, not the tips; and the finger nails must be kept short. The patient must not feel them. When using the heavy muscles of the thumbs or heel of the hands, maintain the same even rhythm; never hurry, even when rapid or deep and heavy kneading is required; preserve the rhythm.

As the finished musician keeps perfect time and the artist preserves harmony of color, perspective and beauty, so the true physician, surgeon, nurse or masseuse harmonizes all details in every instance and strives to do better work each successive time. If anything is worth doing at all, it is worth doing well. This motto is never of greater value than in working with the suffering.

Frequently a little lubricant is desirable, but it is better to work without any than to use too much, as the muscles will not contract so well. When the skin becomes greasy, it is very disagreeable to most people. Only use sufficient to cause the hands to grasp the flesh easily when

kneading or stroking, so as to prevent pinching of the flesh or pulling of the hairs on the skin. A lubricant is always desirable after the removal of splints or casts, and it also helps to prevent the pulling of the flesh over newly healed wounds. When the patient is very old or very young or very emaciated, use simple lubricants, such as olive oil, cocoa butter or Evanola. They are sufficient, but when inunction is required, the attending physician will prescribe what he prefers. The use of powders is decidedly contra-indicated.

Massage always improves the condition of the skin, and by the increased circulation of the blood with its accompanying increase of body warmth, it opens the pores of the skin, which are minute excretory organs. The pores help to eliminate the waste from the body. If we use powder, we immediately clog them up, and at once offset our first effort, to get rid of waste matter. Let some one who questions this statement try to give massage with powder, and the masseuse will soon see how the skin becomes glazed and the hand slides as on any slippery surface. Nor can massage be given properly with alcohol or any astringent, for the skin will at once become dry and hard, the pores close and again prevent the very first principle of improving the condition of the skin, which should become soft, pliable and warm. Stroking or rubbing over large muscles with alcohol, such as the

back or legs, may be very grateful. It will be mildly stimulating at first, but other movements cannot be successfully administered with the use of any astringent.

To soothe and quiet the patient and to induce sleep, the long, slow, deep, rhythmical stroking and rolling-kneading movements are particularly effective. These are to be applied to the back, of course, when it can be reached without too much disturbance of the patient. When that position is impossible or unadvisable, this slow, deep, long stroke method can be applied on the limbs or head or any exposed portion of the patient's body.

Massage will often ward off an illness by stimulation of the blood and lymph and by causing better action of the bowels and kidneys.

Sir Charles Bell, the gifted and learned surgeon, said, "The human hand is so beautifully formed, it has so fine a sensibility, that sensibility governs its motions so constantly, every effort of the will is answered so instantly, as if the hand itself were the seat of the will; its actions are so powerful, so free, and yet so delicate, that it seems to possess a quality instinct in itself, and there is no thought of its complexity as an instrument, or of the relations which make it subservient to the mind; we use it, as we draw our breath, unconsciously and have lost all recollection of the feeble and ill-directed efforts of its first exercise, by which it has been perfected.

We ought to define the hand as belonging exclusively to man, corresponding in sensibility and motion, with that ingenuity which converts the being who is the weakest in natural defense to the ruler over animate and inanimate nature."

Sir Charles Bell continues to emphasize the value and power of the thumb. "On the length, strength, free lateral motion and perfect mobility of the thumb depends the power of the human hand."

The thumb has been described as the lesser hand, the assistant of the greater.

The perfect hand for massage should be soft, smooth, dry and fleshy, and of good normal temperature, strong, supple, with a good grip, but must yield readily and have a touch of fineness and delicacy. All muscles and joints must coordinate and work with perfect rhythm. To get these fine points requires unlimited practice. Every position which the hand can assume can be adapted to some form of massage.

No machine has yet been invented that will equal the trained human hand.

Learn to use both hands equally well—practice, practice and still more practice.

Never neglect little points; what may on the surface appear as minor considerations, may make or mar the final results. Every technician should be a person of refinement and education. The same requirements are as essential as in all other branches of the healing science: a pleasing

personality with a confident, evenly poised demeanor, without aggressiveness.

No hard and fast rules can be rigidly enforced. With some patients we must gradually obtain their confidence before we can hope to get results. With others it may be advisable to make an impression, for they demand a positive assurance of ability according to their ideas. Here is an example. A masseuse realized she was not giving full satisfaction to the person receiving the massage, which was a general treatment for a rundown, nervous condition, due to overstrain brought about by long care of a sick relative. Questioning disclosed the fact that the masseuse was not hurting the patient, as a previous one had done, so the present masseuse, realizing the need of using force to make an impression, very easily proved that she could hurt too. All that was needed was to carry the squeezing movement in pétrissage to the pinching point with the tips of the fingers. The patient was soon brought to the crying stage but was so thoroughly convinced that the masseuse understood her business that it was not necessary to hurt her after that proof of "ability".

Many persons are very ticklish and may positively suffer from the least handling. Such persons must be studied individually. For example on the foot, place it on the flat of one hand. Use the massed cushions of the other hand to work with, and most, if not all, of the

disagreeableness will be avoided. While the foot has been mentioned here, any other part of the person may require the same consideration, but the toes and abdomen are usually the most sensitive. Occasionally we find people who suffer from a general hypersensitiveness. They are very hard to handle, and every movement must be calculated. Be exact and firm; never touch lightly, or just on the surface; grasp or press gently but with precision.

General instruction can be given, but training and practice are needed.

CHAPTER V

TERMS

1. Effleurage—stroking or rubbing.
2. Pétrissage—kneading. All pressure movements come under this heading.
3. Friction—light circular rubbing.
4. Fulling—a sort of double kneading, used around joints.
5. Wringing—a twisting of the muscles.
6. Tapotement—percussion.
7. Vibration—an inward trembling.

Most of the terms in massage have been given us by the French, and we still use the name *masseur* to designate the man who administers massage and *masseuse* for the woman, but today we are much more likely to hear the English pronunciation for the other movements.

CHAPTER VI

EFFLEURAGE

Effleurage—stroking or rubbing is best understood as light, surface centripetal rubbing. It begins and finishes massage treatments more generally than any of the other movements. Effleurage is used extensively in all massage, and in some instances it is the only movement desirable.

Indications for Effleurage.—Circulatory disturbances, nervous irritability and muscular contractions are indications for effleurage. Perhaps the greatest leeway for effleurage may be around and away from bruises, sores, burns, etc. In all cases of injury or inflammations, use the cushions of fingers, *away* from the seat of tenderness. As the surface becomes softer and less sensitive, the effleurage can be gradually increased in pressure and length of stroke, until the entire region will allow of deeper and still greater pressure over the entire area. The last movements will be real stroking movements, all directed centripetally.

In cases of surface pus, the effleurage should be directed toward the center or head of the abscess or boil. It must of necessity be very light and be given gently with the balls or cushions of the fingers.

Effleurage on the limbs soothes and relieves nervous tension and contractions, and prepares the parts for the deeper work which must follow.

Effleurage can be applied over the sensitive and small muscles of the eyelids, or equally well over the little finger and toe muscles, as well as on every part of the body.

Over small areas, the flat cushion of each finger or of all the fingers is used; over bruised or tender places, the massed finger cushions; on the large muscles, the flat hand, which must be supple and conform to the shape of the part being treated. The fingers point toward the heart and lead the hand, which can exert graded pressure as desired. This graded pressure is advisable and effective, as it hastens the onward flow of venous blood and stimulates the lymphatics. It acts on the skin, fascia and nerves; it quickens the circulation in the superficial veins and capillaries, soothes the nerves, and increases nutrition as well as elimination of waste.

As the strokes are toward the heart, they must be made upward, except on the neck, where they should be made downward to hasten the flow of blood from the head to the heart. Endeavor to use the hands in line with the fibers of the muscles, so as to follow the direct route of the veins and lymphatics as they conduct the blood back to the heart.

With the part to be treated put at rest and supported in a relaxed position, begin the move-

ment with the hands formed into a broad flat surface. By keeping the fingers and thumb held together, the cushions form a soft pad with which to work. Use the fingers or full hands according to the size of the area to be treated; begin the movement at the insertion of the muscle or muscle group, gradually increase the pressure very slightly over the belly of the muscle, gradually decrease the pressure at the origin; then without lifting the hands, and without losing the beat, glide back to the first position, and repeat several times. This slow, even, rhythmical movement will be very soothing to the nerves and sometimes is all that is needed to quiet and put a patient to sleep, or it can ease pain. The increased warmth induced by the increased circulation helps to relax stiff muscles and to lubricate joints. Gradually increase both time and strength to get deeper into the tissues.

Such rubbing is a blessing in the sickroom and proves a great factor toward recovery; it accomplishes so much in a beneficial line, for it gently starts nature to proceed normally. After a little massage tired nerves and muscles are relaxed; then sleep, the greatest restorative, follows. Upon awakening, the patient feels content and is usually willing to take a little nourishment, which is much more likely to be assimilated; and so, step by step, the improvement goes on, and we realize what a little rubbing or effleurage properly done can accomplish.

On the neck, rub down toward the heart. The hands are placed flat, back of the ears, one on each side of the head, directly over the sterno-mastoid muscles, under which we find the jugular vein and its branch deeply imbedded. By keeping the hands in close contact with the neck and then with a slight twist of the hands, each on its own axis, so as to allow the thumbs of the hands (of the masseuse) to cross over each other, the two hands will pull together toward the insertion of the sternomastoids on the clavicles, and so avoid the trachea when making this pressure on the throat. Pressure there will give a very disagreeable choking sensation and undo any good result previously obtained. This is one of the parts of the body where strict attention must be observed in regard to technic, as faulty movements of the hands may frighten the patient.

When it is desirable to lessen the flow of blood in the head, this effleurage may increase in pressure until it becomes a decided stroking, as it is the strongest derivative movement that can be applied on the head and the throat. Results are quickly noted by lessened flush in the face, as well as by the dimming of the light of the eyes. Care should be taken not to overdo the pressure.

On the chest the hands are placed flat at the end of the sternum, the fingers pointing toward the head. Glide upward and outward to the insertion of the pectoral muscles to the shoulder;

return to the starting point; repeat several times. The up stroke stretches the pectoral muscles out to the insertion at the arm; the return stroke reverses the stretching back to the origin at the upper portion of the chest. Thus we secure the same pumping movement. On a man cover the entire chest with this movement, but on a woman work above and below the breasts. Always avoid friction or pressure of every sort on the breasts, unless ordered otherwise by the physician.

Effleurage, or light stroking, can be given on the abdomen by stroking over the transverse muscle from either side toward the umbilicus to prepare the parts for deeper work, as this portion of the body is frequently very sensitive and must be coaxed to relax by gentle effleurage and deep breathing.

This same movement can be given on the right side by the flat left hand, over and slightly under the floating ribs (on the right) over the region of the liver. Light effleurage has almost no effect on the liver, as this is the largest organ and is so placed that only a very slight portion can be reached. Except as relating to the stomach occasionally, effleurage is almost superficial on the abdomen, as its chief results are to soothe the nervous tension and relax the muscles.

Effleurage on the limbs soothes and relieves nervous tension first and prepares the parts for deeper work which frequently follows. The hands are held in the same positions as for

stroking; the fingers lead, and the full hands follow over the surface toward the heart. Later it may often be necessary to use the clenched fist. The heavy strokes are then called stroking.

CHAPTER VII

STROKING

Stroking is virtually a continuation of effleurage, as usually the whole hand is used with greater strength and force. The clenched fist may be used, especially when applied on the back or the legs. Use the same principle and manner of placing the hands as for effleurage. Always begin at the extremity or insertion of the muscle or muscle group. Let the hands cling gently but firmly to the surface of the leg. As the hands proceed up the leg, one on each side, the pressure is exerted wedge-like and increases, until the greatest pressure is given over the belly of the muscle. Gradually decrease the pressure as the origin or beginning of the muscle is reached. Do not lose close contact with the surface, but with an even, clinging or hugging movement, rhythmically return to the first position; repeat as often as necessary.

We must understand that the administration of massage calls for judgment as well as knowledge; it is often just as necessary to know how little to give as to know how to do it. No hard and fast rule can be presented as to the number of times this should be repeated. Never work until any muscle is exhausted.

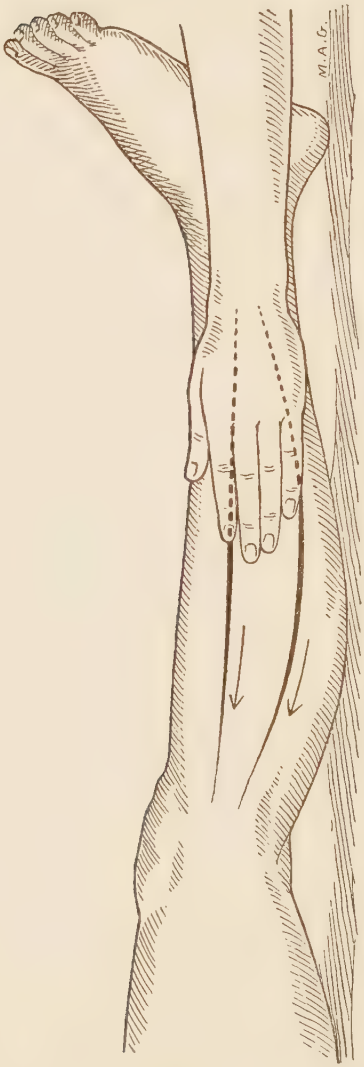


Fig. 1. Stroking with the straight hand.

First, circulation in the veins is improved. The walls of the veins being thin, the flow of blood is hastened toward the heart. A vacuum is produced, which creates a suction. This in turn draws the blood from below to replace that which has been drawn away. Thus, congestion is prevented and arterial circulation is indirectly aided. The lymphatics are also stimulated, and the absorption of waste products is increased. All massage should begin with effleurage or stroking, as it soothes the sensory nerves and prevents spasm or cramp, relaxes muscles and relieves pain.

On the back begin the stroking movement by placing one hand on each side of the spine at the end, the heavy portion of the hands directly over the spinal muscles, not on the spinous process but on both sides; and stretch the muscles up to the occiput; stretch out to the shoulder on each side and continue the stretching of the muscles of the entire back from the spine. Use as much pressure as the patient can comfortably endure, exerting an even, smooth and rhythmical stretching of the large, heavy back muscles. This combined pressure and stretching conveys a like pressure and stretching directly over nerve centers and acts sedatively.

CHAPTER VIII

PÉTRISSAGE

All pressure movements come under this heading.

In pétrissage grasp the individual muscle or muscle group between the cushions of the thumb and the massed fingers. While one hand holds the muscle or muscle group away from the bone with the thumb and fingers, the other hand grasps the muscles in the same manner as the first hand but a little below it. The hands face each other, the one pointing up and the other down. As the second hand gently squeezes upward and outward, with a scooping motion, the first hand relaxes. Before the second hand can pinch, the first hand grasps the same muscle or muscle group again, a little higher up. The second hand also repeats its movement higher up. This movement of alternate squeezing and relaxing causes the muscles to contract and expand in a wave-like motion. When the movement is rhythmically performed, the muscles both simulate and stimulate nature's action to propel the venous blood and lymph forward. The movement is a deep one but should not be forceful. When you start the machinery working, force

is not needed, nor is it advisable. Remember all these tissues are very delicate and must not be bruised; they must only be stimulated and aided to continue their functions, which have been temporarily interrupted. Always work centripetally toward the heart, or, in other words, from insertion to origin and in line with the muscle fibers.

The immediate results are as positive in the lymphatic system as in the venous. The human body is like a huge piece of machinery, a wheel within a wheel. As nature never leaves a vacuum, so, as fast as the blood flows forward, more is pumped or sucked up to take its place. The tissues which are bathed in lymph are more quickly freed of waste products, for this motion of contracting and expanding the muscles removes depleted blood, poisons and objectionable matter, and makes room for fresh blood, carrying nutrition with it. The underlying principle in massage is the same as in exercise. The kneading of large muscles keeps the body working and prevents congestion in the blood vessels.

CHAPTER IX

KNEADING

Kneading is really pétrissage on a larger and more comprehensive scale and is the most powerful movement in massage. The larger muscles or muscle groups are grasped between the heel of the thumb and the heavy portion of the masseuse's two hands, and squeezed, rolled, wrung and lifted from the bone, with the result that the blood is forced out of the veins and propelled forward toward the heart; the nerves, lymph vessels, glands and all tissues are stimulated. This movement of alternate contracting and expanding the muscles forces the lymph out into the lymphatics; by the same movement veins are emptied and refilled; waste is sent forward and room made for better blood, conveying greater nourishment. Kneading is the most important and comprehensive movement. It is very necessary in the different forms of paralysis and is equally valuable when used to replace active voluntary exercise.

Both pétrissage and kneading are hard to explain and equally difficult to acquire. Teaching, time, patience, and practice, and more and more practice are needed to perfect this move-

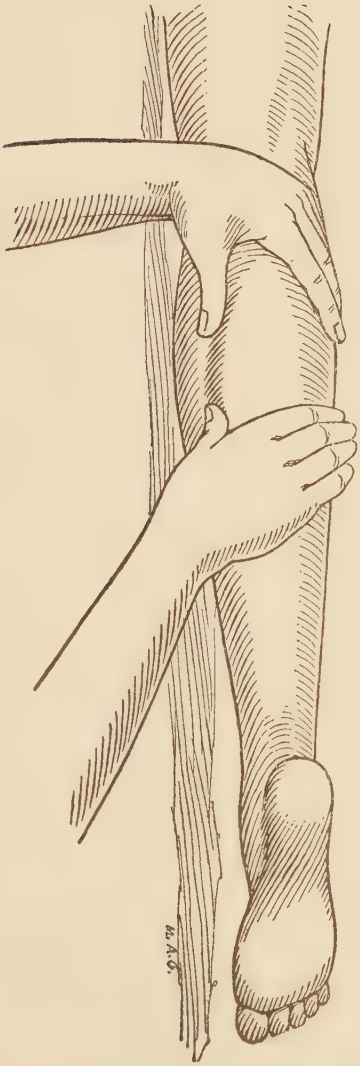


Fig. 2. Pétrissage or kneading.

ment to prevent bruising and pinching and to give it that smooth, wave-like rhythmical motion so acceptable to the sick, while accomplishing the varied results.

Kneading often requires great force on the buttocks and thighs. Nearly all the tissues are delicate and can very easily be bruised by force, except where the muscles are strong and powerful.

CHAPTER X

ROLLING—KNEADING

This form of kneading is used on the heavy muscles of the back, buttocks and on the upper muscles of the back of the leg and of the thigh.

On the back of the leg, grasp one large muscle group in each hand, while squeezing the mass between the heavy thumb muscles and the whole hand. Use force from behind, with the heel of one hand, then of the other, with a rapid succession of squeezes, accompanied with a pulling away of the hands from each other and the bone, while the flesh is grasped firmly. We get a very powerful reaction on muscles, veins, and lymphatics, as well as quickened arterial circulation and nerve stimulation.

When this rolling-kneading is used on the three gluteus muscles, the same method of grasping the mass is employed. The hands wring as well as squeeze. The masseuse must be careful not to strain in the crease between the two sides of the buttocks.

This rolling-kneading is also used on the heavy muscles of the back as a powerful sedative. Placing both hands as one large mass, press with the heels of the two hands directly

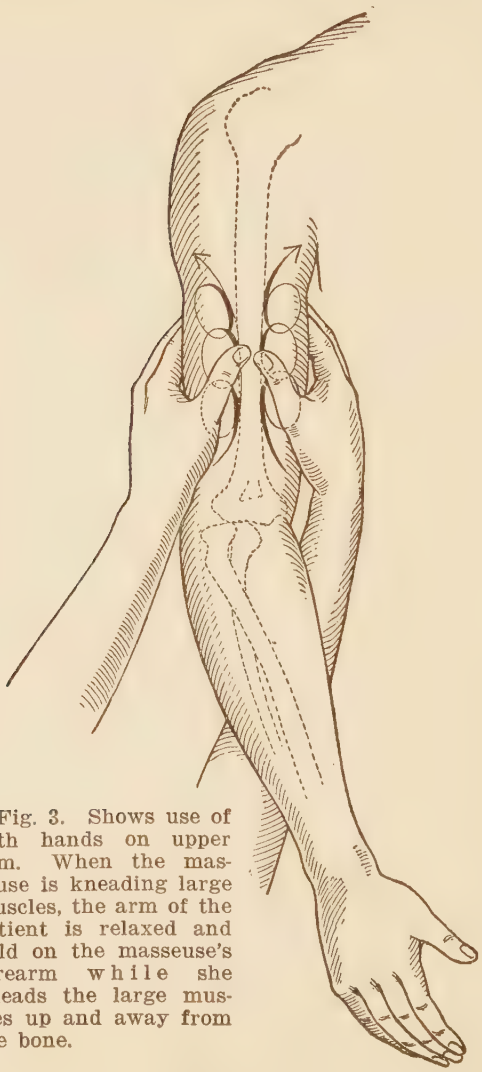


Fig. 3. Shows use of both hands on upper arm. When the masseuse is kneading large muscles, the arm of the patient is relaxed and held on the masseuse's forearm while she kneads the large muscles up and away from the bone.

over all the muscles close to the spine, but not on the spinal prominence. The fingers must point outward to the side of the body. The steady even pressure will also be directly over the main nerves. Roll all the heavy muscles under the heels of the two hands slowly and steadily over the ribs but without much pressure while rolling. Work from the occiput to the end of the back, one circle overlapping the previous one. Do not drag on the flesh. Keep it slowly moving, return, and continue this rolling-kneading up to the occiput. Move the hands to the opposite side of the spine. The fingers will now be resting directly on the spinal muscles and over some large nerves. The pressure of the movement is here exerted by the massed fingers. Continue the same rhythmical, slow, rolling motion to the end of the spine; return, and repeat as often as is required by the individual patient's need. Finish by stroking over the same muscles from the occiput downward, one hand on each side of the spine, stroking alternately. Make both hands as heavy as possible so as to stretch the spinal muscles and the nerves underneath. Nerve pressures and nerve stretchings are sedative and almost always will induce sleep.

CHAPTER XI

FRICTION

Friction is light, circular rubbing, always performed by the cushions or fleshy parts of the fingers or hands, by lightly stroking in a circular direction away from the swelling or seat of injury. Work very lightly at first, gradually increase both pressure and area. As the surface becomes less painful and soft, the pressure can be increased and the circles enlarged. The pressure is given at the start on the up stroke. The return stroke keeps in touch with the flesh without any pressure, frequently interspersed with effleurage, until really strong and penetrating pressure can be used and endured. Always avoid bruising or pressing on a bone. On the wrist the balls of the thumbs or first three fingers can be pressed into the spaces between the small carpal bones, with a rolling motion of the finger cushions. The wrist, of course, must be supported. If this support is not given by the operator, the hand and arm must rest on a smooth surface, such as a table or arm of a chair, with a pillow beneath.

On larger surfaces, such as the knee joint, the

friction can best be accomplished by the heavy part of the thumbs or the base of both hands.

Over the largest areas, such as the back or the gluteal muscles, both hands are held together, forming a large strong cushion. They should move simultaneously from behind, in a pushing movement of the mass, drawing the muscles away from the underlying bone, and with a slow, even, rolling, wave-like motion, bruised or matted muscles are eased and freed. Decided comfort is experienced by those who are suffering from the restriction and pressure of casts. Products of inflammation are squeezed out and moved on; absorption and local circulation are stimulated.

CHAPTER XII

FULLING

This is a combination movement of effleurage and pétrissage which is most commonly used around joints. It is used on the knee to break down adhesions or to prevent ankylosis after injury and fracture, or stiffness resulting from one of the many forms of rheumatism, or from bruises. When fulling is required around the knee, the masseuse places one hand above the joint, grasps the quadriceps tendon between the thumb and the fingers of the same hand, and pulls upon the tendon, while the other hand used in the same manner grasps the tendon below the patella. The hands face each other. They first pull away from each other and from the patella. Then the movement is reversed; both hands push toward each other to stretch the tendons in the opposite direction. Repeat several times. Perform the same pulling and pushing movement on both sides of the patella, the musculus vastus internus being grasped in one hand, and the vastus externus in the other. The thumbs work in between the bones and the muscles all the time that the cushions of the heavy part of the thumbs are kneading and squeezing.

This is rather a difficult movement to do well without causing undue pain to the patient, but it is necessary not only to increase the forward flow of the venous blood and the lymph but to stretch the tendon and cause an increase of synovial fluid around the joint. These different motions will help to warm up the tissue, to limber the tendons, and also to lubricate the joint to enable a freer and fuller stretching, flexing and extending of the extremity.

CHAPTER XIII

WRINGING

Wringing supplements kneading on large muscles. It is a pulling and twisting of the muscles from each other and from the bones at the same time. Wringing is stimulating and is used in paralyzed conditions and also on the back for tired, overtaxed muscles and on the buttocks, thighs or other large muscles.

Grasp a muscle or muscle group in each hand, the two hands opposing each other. Squeeze from below upward, while pulling from each other as would be done when wringing out a towel to squeeze out the water.

On the back, place one hand under the arm over the ribs, the other on the heavy back muscle. Follow the shape of the ribs so as to allow the greatest amount of the pressure to be exerted on the intercostal muscles. While the hand under the arm pulls the muscle mass toward the back, the other hand presses the mass away from the spine; so when the two hands pass, they thoroughly wring the entire group of muscles. This is very restful to an overtaxed back. Always give the pressure with the heavy muscles of the hands and avoid pressing the patient's muscles against the bones.

CHAPTER XIV

TAPOTEMENT OR PERCUSSION

Percussion is the generally accepted term for all sharp, quick movements which are given by the fingers, hand or fists from flexible wrists to give quick stimulation.

Percussion can be given with the balls of the fingers quickly but gently and lightly. Strike on the muscles of the eyelid, or with greater force on the head, nose and cheek muscles.

The flail is performed by the limp fingers striking across muscles, such as on children's arms or legs, and spinal muscles. On older persons whose muscles are larger and more resisting, both hands can strike across the muscles with a quick back-and-forth movement while the wrist is kept relaxed.

Cupping is applied on the back, over the fleshy parts. Form cups or hollows in the hands; quickly strike with the air enclosed, first with one hand and then with the other in rapid succession.

Over the spinal muscles, strike across with the ulnar side of the fingers.

Hacking is done with the ulnar border of the hands, generally used over the liver, but on very fleshy and heavy persons the clenched fist may be

necessary. Strike glancing blows on the buttocks and heavy thigh muscles. The muscle mass receives the quick blow in such a manner as to draw the flesh away from the bone quickly. As the muscle mass is released, it rebounds back into normal position. Never strike the muscles down to the bones with the fist in the manner of a hammer to hurt and bruise.

All percussion is stimulating at first and is given where immediate results are needed. It causes the muscles to expand and contract forcibly and at once, thus more violently pushing the venous blood and lymph out and forward, which in turn causes a quicker intake of blood and gives the nerves a violent stimulation.

When percussion is prolonged, it ceases to stimulate, reacts in the opposite way, deadens the nerves, and overtaxes the muscles.

CHAPTER XV

VIBRATION

Vibration is an inward trembling. Vibrations have proved to be of great value in the sick-room; especially as they cause increased nerve and peristaltic action. They should not be violent or rough. There are several ways of performing this movement, according to the part of the body needing stimulation.

When a paralyzed limb requires pronounced stimulation, grasp the extremity in one hand and with full extension but without attempting resistance, vibrate the entire limb.

When it is desired to stimulate a special nerve, the hand can be held cone-shaped, and with just one, two, or more fingers rest lightly over the nerve center, or follow a nerve over its entire course with a continuous vibration, by a rapid, concentrated contracting and expanding of the muscles of the masseuse's upper and lower flexor arm muscles. To aid in dispersing a cold in the chest, place one or both hands flat upon the chest and vibrate. More weight is needed there, as the chest walls offer resistance. On the stomach, place the right hand under the outer curvature and under the floating ribs on the left side of the body. Vibrate with a con-

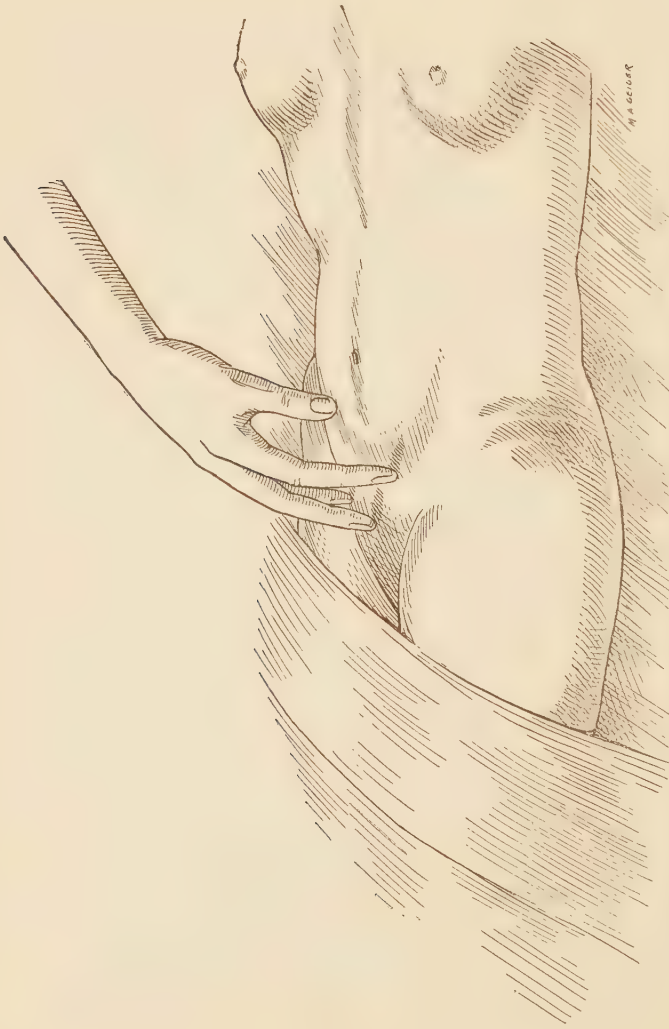


Fig. 4. Vibration over distended bladder, ovaries, pit of stomach and nerves.

tinuous vibration as the hand follows under the stomach up to the pylorus. This increases the peristalsis of the stomach and stimulates digestion. Over the pit of the stomach, vibrate with the flat of the fingers to relieve flatulency. For the liver, place the left hand behind the floating ribs on the right side of the patient's body, press the floating ribs up, against as much of the liver as can be reached, to push that organ up and nearer to the front of the body. Then with the heel of the right hand flexed, reach under the floating ribs and vibrate forcibly. As the liver is such a large organ and so little of it can be reached directly, more force must be exerted to make any impression. But avoid undue pressure on the end of the ribs. Over the distended bladder, use the balls of the fingers of one hand, place them over the bladder. Do not press; vibrate with scarcely more than a touch. Pressure would be distressing. As the vibration is to stimulate nervously, to hurt would counteract the desired result. In postoperative work, the whole hand or hands can be used either over both sides or directly on the abdomen, even after a fresh incision, provided the vibration is properly performed without any surface shaking. A firm placing of the hands on the abdomen, preferably over the sigmoid flexure, conveys a decided vibration—not a shake—on this point. Binders need not be removed. No extra suffering should be experienced when this is properly performed,

and the chances for relief to the patient are favorable.

Recently a new mother who had not been able to urinate since delivery, twelve hours before, was given a few vibrations by the balls of the

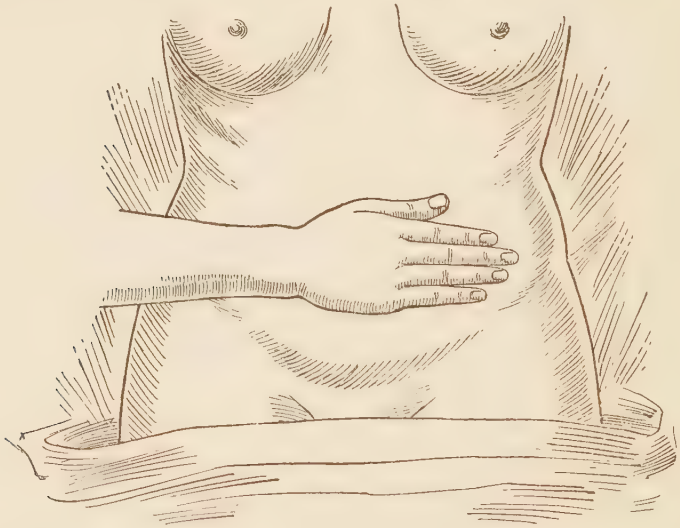


Fig. 5. Abdominal vibration with flat hand over umbilicus or sigmoid flexure.

nurse's fingers, lightly over the full distended bladder. The result was very satisfactory, as she voided forty-six ounces and without pain. This is not an exceptional example; it is expected in 90 per cent of normal maternity cases.

Every day, vibrations are proving to be of greater value than has been previously recognized. But they must be vibrations, not shakings.

Only those persons who have a perfect control over their hands and muscles should be allowed to give this movement in postoperative cases, as a false move may cause trouble.

At present it is impossible to give the percentage of postoperative patients who are relieved by this simple method. There is nothing disagreeable about the procedure and no danger of infection. If the results are not satisfactory, in a half hour or less, it can be tried again, or other methods can be resorted to, as no harm has been done.

A woman was operated upon in the forenoon for appendicitis. She progressed satisfactorily, except for gas pains, which would not allow her to sleep, even when night came. The nurse gave vibration over the abdomen, turned the patient over as well as she could, propped her in position with pillows, then with the flat hand, rubbed and kneaded her back, with the result that the patient went to sleep and slept between three and four hours.

Another patient returned from the operating room after two hours required for a serious and prolonged operation. She was placed in bed at 10:15 A. M. An order was given for catheterization at 6:15 P. M. The patient complained of severe pain in the bladder. Warm water was used on the pubes without result. The area over the bladder was vibrated carefully. At 6:40 P. M. she voided fourteen ounces.

CHAPTER XVI

GENERAL MASSAGE

General massage is variously termed body or routine massage.

Let at least one hour elapse after eating before beginning the treatment. Prepare the patient in a comfortably warm room. Have her remove her clothing and don a bathrobe or kimono and wear it reversed, that is, with the opening down the back instead of in the front. Let her lie on a stiff mattress or single couch, without springs if obtainable. Springs give under pressure, causing considerable loss of power. This position allows of greater ease for the masseuse, and it also obviates the need of exertion on the part of the patient, who should relax and be encouraged to breathe deeply but without effort. Massage should begin on the extremities, preferably on the left leg, as in so doing a great many unnecessary turnings are eliminated.

The bedding and robe can easily be turned back and only that part of the limb which is being treated need be exposed. Begin with effleurage with the straight hands, one on each side of the leg. Start at the foot, with the hands lying flat on the surface, the thumbs held close but not stiffly to the side of the fingers, forming

a large soft mass of all the muscles. The hands proceed to rub upward, the fingers held wedge-shaped to start the movement. As the belly of the muscles is being reached, the pressure is increased; as the hands continue the upward motion, the pressure is decreased toward the origin of the muscles, without lifting the hands or losing contact with the flesh. Hug or cling to the surface, and glide back to the first position. Repeat from four to six times. Never allow the little finger to separate itself from the hand, or the thumb to press separately and so catch the flesh between the thumb and forefinger, as that will give a disagreeable feeling of pinching, or the little finger when separated from the others may cause a tickling sensation. The movement should be pleasant as the hands glide rhythmically over the surface in line with the muscle fibers. Frequently a very little lubricant rubbed on the hands of the masseuse will help to keep them smooth and facilitate the work, but too much lubricant will hinder and also be unpleasant to the patient.

After preparing the limb with the effleurage or rubbing, begin to manipulate the toes. Hold the foot steadily in one hand and begin to stroke each toe separately between the thumb and the fingers of the other hand. Stroke up, and stretch the tendons, four to six times, then pull each toe with a steady, even stretch. This will assist Nature in her method of oiling the

machinery of the joints. She carries her own oil can with her in the form of bursae, or sacs, which are interspersed between joints, which move upon one another. Traction is supposed to act directly on the bursae. Work over the top of the foot, use the balls of the thumbs, alternating in circles, one circle overlapping the other. Work in between the several tendons, especially at the instep, and around the malleolus. This movement is friction. Repeat several times, then rub up and around, and over the top of the foot. Next, hold the heel of the foot in the palm of the hand, grasp the top of the foot in the other hand. Both hands exert a slight but steady pulling, while the ankle is flexed, extended and rotated as much as the joint is capable of permitting. This steady, even pulling prevents dislocations, for it holds all tendons evenly. The strong ones are stretched and the weak ones held in their true positions. The sole of the foot is then given friction by the thumb muscles of both hands, followed by a rolling and fulling movement. The foot is held and pressed between the two hands of the masseuse, and the whole foot is rolled. The different ligaments and muscles and tissues are acted upon. Follow by stroking from the toes, well into the hollow of the foot. Begin the stroke with the ulnar border of the one hand, and with a slight twist of the wrist the heel of the other hand will furnish the movement with pressure against the opposing hand. Percussion

with the limp fingers on the sole of the foot may finish the work on that member.

Proceed up the leg, first applying effleurage, which is more likely to be stroking here, as the muscles are larger, stronger and more resistive. The hands should be placed as previously described, and the masseuse should then begin the pétrissage. Grasp both sides of the leg, a hand on each side; begin the squeezing motion from behind forward, with an upward and outward squeeze between the cushions of the massed fingers and the cushions of the thumb; increase the pressure at the belly of the muscles, and decrease it at the origin below the knee. Do not dig in with the tips of the fingers or thumbs, and lessen the pressure before reaching the pinching stage. Repeat from four to six times. Add a few effleurage strokes, and end with percussion over the belly of the muscles by using the limp fingers across the muscles as with a flail. Cover the foot and lower leg to retain the body warmth and relaxation. Never expose more of the body than is absolutely necessary.

Begin the upper leg with effleurage from the knee to the hip, as described for the lower leg. When the masseuse is working on the left leg, the right hand covers a longer area as the stroking is carried up to the hip. Fulling can be given around the knee joint. The right hand will grasp the quadriceps tendon above, fingers pointing down toward the foot, while the left hand will

grasp the tendon below the patella. Each hand will first push toward the other, then pull away, thus stretching the tendons well. The right hand will now grasp the musculus vastus externus, the left will grasp the musculus vastus internus to knead, each with a slightly upward movement which will pull the muscles away from the patella to help free the knee joint.

Proceed up the leg with deep, double kneading by both hands, alternating the upward and outward squeezing movement evenly and rhythmically. In such a manner it proves much more grateful to the recipient than when both hands perform the same motion in unison. Cupping can be performed on these large muscles to better advantage than other forms of percussion. Form a hollow in each hand by keeping the thumb and fingers together; with the flexed hand strike quickly over the belly of the muscle, with the air contained in the hollow of the hand, first one hand and then the other, in quick succession. When this movement is properly performed from flexible wrists, a decidedly hollow sound will be given forth. All percussions bring the blood quickly to the surface. Never give percussion over a joint, but only on the fleshy portions of the body, and follow with effleurage to equalize the effect. Place the heel of the right foot in the palm of the operator's left hand, and the right hand under the knee, press the left forearm against the sole of the patient's foot, and exert

greater pressure under the fore part of the foot. This flexes the three joints, the ankle, knee and hip. During the flexing, the right hand will shift its position from under the knee to below and against the front of the patient's knee, to exert greater pressure for greater flexions. In reversing the movement to extend the leg, the right hand will change its position to the top of the knee, and press down, and the left hand will exert pressure on the patient's heel but will relieve all pressure from the sole of the foot. This will insure full extension of all three joints, the ankle, knee, and hip. Cover the leg as was done with the foot.

Proceed to the left arm, which can easily be slipped out of the loose gown. Let the arm lie at rest, relaxed on the couch. Start the effleurage from the finger tips to the shoulder, the same as for the foot and the leg. The work on the arm and the leg is somewhat similar. The hand requires more minute and detailed work because we have the thumb to deal with as a separate member, for it is the thumb which enables us to hold and grip objects, and also because the entire hand and wrist are so much more supple and pliable. All of the work is of the utmost importance, and besides we have supination and pronation of the forearm, the articulation peculiar to the forearm alone. The mode of procedure is the same as on the foot. Begin with each individual finger with the same movements

which have been described in detail. Be very particular with friction and pétrissage of the abductor muscle of the thumb, between the thumb and the hand, and also be careful with the friction by the balls of the fingers between the carpal bones on the wrist. The hand requires more time, as it must receive special care and attention both inside and outside. Every joint of every finger must be flexed and extended. The thumb must be treated separately. From the hand, proceed up the arm. Pétrissage on the front of the lower arm, given alternately, first by one thumb and then the other, while the forearm lies limply in the operator's hand, is a very soothing and grateful movement. The extensors on the back of the lower arm are often hard to grasp well. The best way is to grasp them between the cushions of the fingers and the thumb, and to perform a little rolling motion similar to rolling a lead pencil between one's fingers. Follow by stroking and percussion with the finger tips. The upper arm is easily managed. Let the patient's forearm rest on the operator's left forearm, perfectly relaxed. Then grasp the biceps muscle in the left hand and the triceps in the right hand, and knead with the same upward and outward squeezing motion, alternate the action of the two hands rhythmically to produce that soothing of the nerves while increasing the blood circulation and the lymphatic action. Wringing is then given to these muscles of the upper arm.

The right hand grasps the triceps, and the left hand takes the biceps of the patient's arm. Then a squeezing and at the same time a pulling of the muscles away from the bone are executed. This is a very strenuous movement and not always advisable. It forces the blood out vigorously in the same manner as wringing a towel will squeeze out the water, and of necessity sucks up more blood to replace that which has been pumped forward by the forced contraction and expansion of the muscles. Give all the movements as described for the leg, unless it is necessary to change them because of the special location, size and use of the part under treatment. Slip the arm back into the sleeve. Quietly step around to the right side of the patient and repeat on the right leg and arm what has been done on the left side. After the four limbs have been treated, the bedding and gown can be lowered to expose the neck and chest.

As the circulation in the head is reversed, all strokes are from the head down, to aid the venous blood back to the heart. Place both hands over the sternomastoid muscles, one on each side of the head under and close to the jaw bone. With a firm hugging and pulling movement stretch the muscles down to the insertion on the clavicles; keep the hands in close touch with the neck by a slight twist of the wrists, avoiding the trachea. If one thumb overlaps the other as the stroke is finished, pressure over the

trachea will be prevented. Kneading of these same muscles is advisable, using the thumbs

Fig. 6. Shows stroking down over the sternomastoid muscles.

alternately. Great care must be exercised to prevent the disagreeable sensation of choking.

Technic is essential here, or the patient may be frightened.

Next, the chest is massaged. Stroke down the full length of the sternum several times, with both hands held flat, side by side or one after the other. On a woman it is advisable for the masseuse to let the two hands follow each other very closely to avoid pressure on the breasts. With the hand lying flat over the pectoral muscles, with the fingers pointing up and outward toward the shoulders, press and stretch the muscles from the sternum to the shoulders; reverse the movement by pulling backward to accomplish the same expanding and contracting of these muscles and to aid the venous and lymphatic circulation. The pressure will also cause deeper inhalation and exhalation. Start again from the base of the sternum, the fingers pointing out and under the breasts, and cause the same contracting and expanding of the remainder of the muscles of the chest. Also use sufficient force to cause the ribs to press closer together and then to expand. In massaging a man the movements need not be interrupted.

Sometimes the pectoral muscles can be kneaded like other muscles at the insertion in the arm. Percussion may be given with the balls of the finger tips, or with the cups of the hands.

Cover the chest, lower the bedding, pull up the gown to get at the abdomen. The abdomen always resents being handled; so it is advisable

to start by coaxing the abdominal muscles to relax to enable us to give massage without caus-

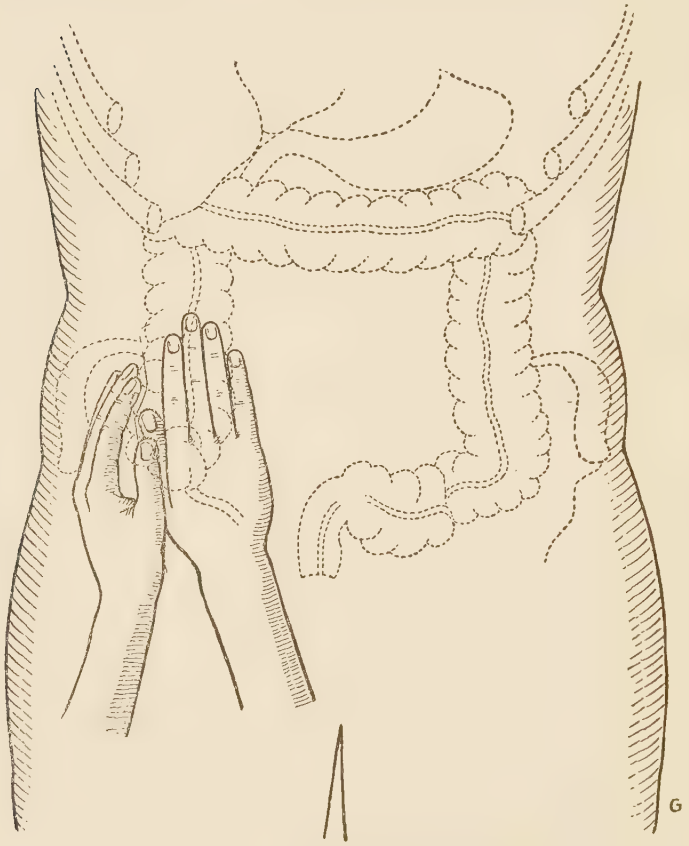


Fig. 7. Shows first position of hands on abdomen over the colon

ing undue discomfort. A little lubricant is desirable. Allow at least an hour to elapse after

eating before manipulating over the digestive tract. Stroke slowly with the full, flat hand

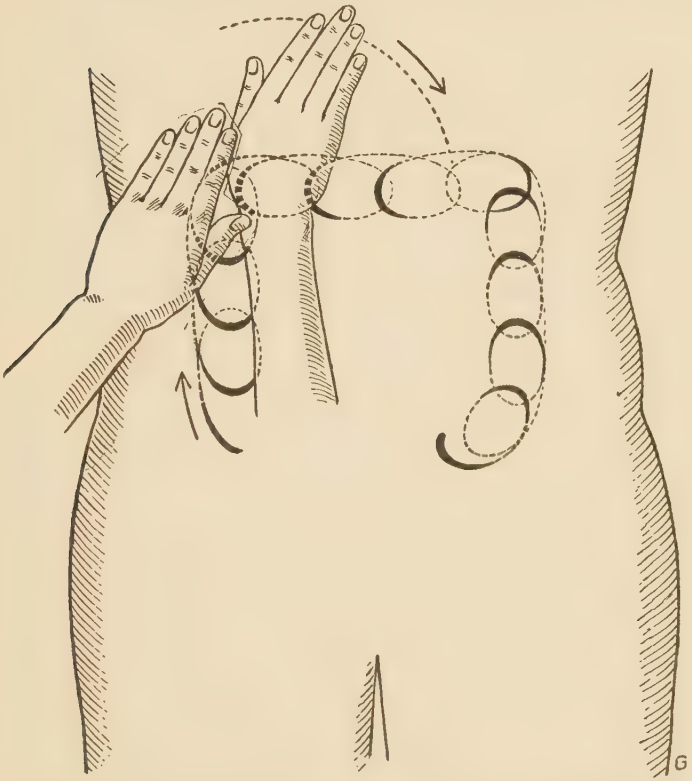


Fig. 8. Shows second position, left hand is following and preserving results gained by right hand as it twists on its wrist to continue the kneading of the transverse colon.

toward the umbilicus. Nature never hurries, and she will resent haste by contracting the muscles, thus preventing all efforts to reach the organs.

First position: start at the beginning of the ascending colon, just after passing the cecum. With the right hand flat, the fingers massed, start

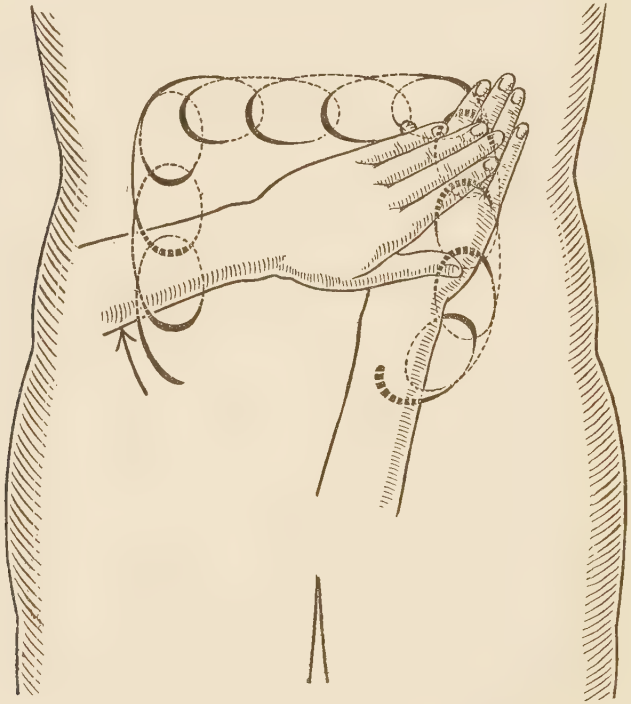


Fig. 9. Shows third position as hands meet at splenic flexure and reverse pressure to aid contents of colon toward the sigmoid flexure.

with an upward stroke, increasing the pressure. Second position: the pressure of the flat fingers is gradually lessened as the heel of the hand advances and assumes the pressure into the

hepatic flexure, under the floating ribs and liver. No pressure of the fingers is given over the floating ribs. Massed fingers of the left hand now come to the assistance of the right hand, to retain any advance that has been gained. Third position: the right hand slowly twists on its own wrist and continues the slow stroke across the transverse colon to the splenic flexure, which it holds down until the left hand arrives; it has been following closely behind the right hand, continuing the stroke. Both hands stroke the descending colon to the sigmoid flexure where a slightly upward and inward pressure is exerted to help raise the turn of the intestine, as here it makes a double twist backward and inward. This last pressure is a continuation of the stroke, not a separate motion. Lift the hands completely from the body easily, not jerkily. Start again at the beginning of the ascending colon. Repeat from four to six times. Kneading is next given. As all of the intestines and internal organs are flexible, they will naturally slip away from pressure when not held in place; consequently, it is advisable to place the left hand between the ilium bone and the ascending colon before starting to knead. With the right hand in the same position as for stroking, begin the movement by an upward circular motion; the pressure must reach down and be exerted directly on the colon. The up stroke of the circle is the essential part of this movement; here the return half is on the

surface without pressure as the circle is completed. One circle overlaps the previous one. Continue up, across, and down, the same as in stroking. The left hand follows and kneads too,

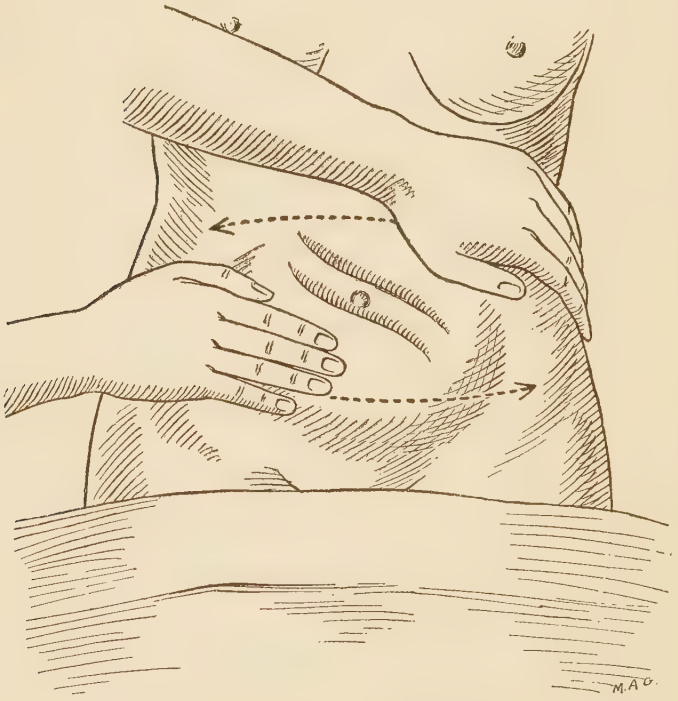


Fig. 10. Wringing of the abdomen.

after passing the hepatic flexure. Both hands finish at the sigmoid by repeating the upward and backward pressure toward the rectum. Repeat several times. Follow with wringing;

with the left hand placed on the right side of the patient and to the right of the colon, the right hand reaches over, behind the descending colon, and pulls the muscle mass from the left side of the patient, while the left hand pushes from the right side. Both hands pass, the left hand above and the right hand below the umbilicus. Reverse the movement. The nurse will pull with her left hand from the left of the patient, the right hand will push from the right side, both hands passing, one above, the other below the umbilicus. This will wring and stimulate the small intestines. Follow the movement with vibration, one hand on top of the other, both flat over the center of the abdomen; vibrate during the patient's inhalation. Unless the patient is prepared for a disagreeable sensation during the vibration, she may be frightened. This movement does not hurt, but as the pressure is directly over the abdominal aorta, it is not pleasant. Finish with a general stroking.

For the stomach, place the right hand under the floating ribs on the left side of the patient; stroke with the whole of the flat hand toward the pylorus, and follow the outer curvature. Where the muscles are soft and flabby, the left hand can reach over and grasp some of the stomach under the floating ribs, and the right hand will aid the left in wringing and kneading from behind forward to the pylorus. Vibrate with the whole of the flat right hand from behind, forward to the

pylorus, following the outer curvature with a continuous vibration.

The liver is such a large organ and so encased inside the body frame of the body that it is hard to reach. Place the left hand against the floating ribs on the right side, press forward and force the liver nearer the front of the body; the right hand semiflexed will rest over the ribs, and with the heel press in and under the ribs, directly on a portion of the right lobe of the liver. A strong vibration can then be performed. A general vibration of the entire abdominal viscera, given by both hands simultaneously, with the masseuse facing the patient, her left hand under the patient's right side, the right hand under the left side of the patient, and both hands held under and pressing against the lower back, will administer desirable stimulation.

The anterior side of the entire body has been thoroughly manipulated without unnecessary exposure and with no effort on the patient's part, but we must now ask her to turn over. Have a pillow placed under her head, let her arms be partially bent under the pillow, place another pillow under her waist to raise and relax the back muscles. The patient should be at ease in this position.

The backs of both legs are now ready for their final manipulations. Stroke first, follow by kneading and percussion. Start with long steady strokes toward the heart; return with light

Fig. 11. Vibration of the liver.

strokes, just clinging to the surface. In the popliteal space upward stroking is the only

movement desirable or required, as a rule, since every stroke is given directly over the nerves, veins, arteries and lymphatics.

The upper portion of the back of the leg is always large and resistive in proportion to the patient's general build and strength; consequently, it is often necessary to divide the four largest muscles into two groups when kneading, and to give a vigorous rolling-kneading by using the heaviest portion of the heels of both hands, which must grasp the muscles firmly between all the heavy muscles of the thumbs and hands; squeeze, wring and roll all at once, over and away from the bones but not on them. Because more force may be needed to obtain the required results, we must be careful not to bruise. This would be likely if the soft parts were rubbed and pressed against the bones. Percussion given on the backs of the upper legs and buttocks is applied by the fist, from a relaxed wrist, with a glancing blow, to pull the muscles quickly away from the bone, and as quickly let them resume their original position. Any and all percussion must be quickly performed. Cover the legs.

For the back lower the covers and open the gown; place first one hand, then the other over the muscles of the neck on each side below the occiput; stroke down to the end of the spine, with the hand in close contact to the body, the thumb close at the side of the hand, forming a soft, flexible, but strong mass. Avoid the spinal

prominence, and stretch all the muscles in one continuous stroke in which the second hand takes up the movement before the first one finishes. Repeat several times. The hands, one on each side of the neck, stretch the muscles out to the top of the shoulder in line with the fibers of the trapezius muscle; reverse the pressure but do not raise the hands, stretch the lower portion of the trapezius muscle in line with the fibers of that portion down to the spine. This stretches first the upper portion of the trapezius muscle from the origin to the insertion and the balance of the muscles back and down to the origin, from the first cervical to the twelfth dorsal vertebrae in line with the fibers of the muscles. With the hands placed one on each side of the spine over the lower dorsal vertebrae, the fingers pointing out, to the armpits, stretch the upper portion of the musculus latissimus dorsi out to the axilla; reverse the strokes without lifting the hands from the surface and stretch the entire balance of the two sides of the muscles of the back down to the coccyx. This method stretches the entire muscles on both sides in line with their fibers. Repeat. Next, with both hands, one on each side of the spine, start at once to knead the spinal muscles by picking them up with the heavy thumb muscles, squeezing them between the thumbs and forefingers, while both hands rest steadily down on the back; continue both up and down the back. This is for the general kneading

of all the muscles of the back. Then begin to manipulate one side of the back at a time. The best results are gained with the least exertion to the masseuse if she will work on the side away from her. All parts not being treated must be covered. Both hands are placed on the back at once. Start kneading; use the hands the same as in picking up and squeezing the muscles, only as the back offers a large flat area, the hands must rest on the surface. First one hand works and then the other. Pick up the muscles between the thumb and the forefinger; the other fingers and the heel of the two hands help to push the muscles into the grasp. Squeeze with the same upward and outward motion; before dropping that portion which you have just squeezed, the other hand performs the same movement; thus you continue the onward and forward squeezing motion to empty the blood vessels and quicken the lymphatic flow as was done on the legs or arms; and by the same rhythmical wave-like motion you soothe the sensory nerves. Without losing contact with the body after finishing the last movement, the wringing is introduced; one hand rests on the back muscles near the spine, the other under the arm; the two hands pass, as one pushes the muscles away and the other hand pulls the muscles. By standing slightly above the patient, the hands rest easily over the intercostal muscles between the ribs; this allows the strength of the movement to be exerted on the

intercostal muscles and avoids bruising or hurting the muscles by pressure on the bones. This is very comforting to a strained or tired back. For decided stimulation, percussion is applied, always given from a free flexible wrist. Cupping is most generally used on the back by holding both hands semiflexed, with the thumb and the hand held together, forming a hollow within the hand and striking with the air, this brings the blood very quickly to the surface. The sides of the fingers, held limply and striking across little muscles, or the ulnar border of the two hands striking alternately over the muscles over the ribs and liver, or the heavy sides of the hands, may be needed on the liver. According to the size and strength of the muscles, we will apply our different forms of percussion; it is always performed quickly. Finish the back with long, deep, slow strokes from the occiput to the coccyx. Relax the wrists and make the hands heavy, so as to pull and stretch the spinal muscles.

If the patient is asleep, cover her and leave her; but if awake, help her to turn into a comfortable position, cover and leave her for at least a half hour if not longer. A little nourishment, if it can be given without too much disturbance, may be appreciated.

CHAPTER XVII

CONVALESCENCE

Convalescence is that period in an illness after the crisis has passed but before the patient has gained the strength and power to resume normal activities.

The patient is in bed or on a suitable couch; every care is taken to insure perfect comfort, fresh air and quiet surroundings, warmth, but no overheating.

Begin, as in general massage, with light effleurage, not sooner than one hour after nourishment has been taken. Follow with pétrissage. The movement is the same as for kneading, only on a smaller and less forceful scale, and consequently is better adapted to people who are trying to regain their strength. Follow with effleurage.

In convalescence effleurage plays a very prominent part. It will be the first and often the only movement. The other movements are gradually added, as described for general massage, except that they must be light in force and fewer in number. We treat one limb after the other; then the neck, from the head down; all strokes are centripetal, as the effort is always to aid the

venous circulation. It is essential that this point should never be overlooked; the fundamental principle in the sickroom is to aid the venous circulation. Especially in convalescence from any illness whatsoever, accident or operation, when the patient has been obliged to remain quiet for a length of time, the circulation is always retarded; as all will recognize by the need for the hot water bottle at the patient's feet to supply warmth.

The person who is active all day long does not need the hot water bottle. The massage takes the place of artificial heat by stimulating natural methods. Whenever any movement is made, certain muscles are brought into action which pump the venous blood forward. As one set contracts, the opposite relaxes, and this causes a suction to draw more blood to the part to replace that which has been drawn away. It does not matter what part of the body we are considering; this alternating motion of contracting and expanding pumps the contents of the veins to the heart, sends the lymph through the tissues, and stimulates the excretory organs. The blood goes to the heart where the impurities are drawn off; then it courses on to the lungs where it is reoxygenated, and it then returns to the heart and is pumped again by the heart through the arteries. Thus, purer and fresher blood carries more nourishment to the whole body, for we are nourished through the contents of our arterial blood.

It is all right to say that we are nourished by the food we eat. That is true, but it is only by the food which is assimilated. The food is digested in the stomach and small intestine, and the nourishment is taken by the blood through the system. This fact is thoroughly known and understood by everybody, even when the whole process of digestion and assimilation is not recognized.

Here then is where massage plays such an important rôle in convalescence. First, the effleurage stimulates the little capillaries and the lymphatics, and the veins receive their impulses at the same time. As the blood quickens, the surface of the skin is warmed and the little pores are opened; they are minute excretory organs. When the hands are slightly lubricated, they help to soften the surface, prevent the disagreeable sensation of pulling of the hairs, and the tiny absorbents begin to do their duty and absorb the oil.

Friction is the second movement. The balls of the thumbs or fingers gently roll the skin over the underlying tissues. The little circles alternately pull and relax; thus, stretching of the skin is accomplished. The effleurage interspersed in between all the different movements acts directly on the sensory nerves and soothes them.

Pétrissage follows. This lifting of the muscle from the bone and squeezing is a more powerful

motion. Great care should be exercised so as not to bruise, pinch or hurt; that is why the technic of massage is so essential and absolutely necessary in all forms of convalescence. During the convalescent period the patient is very sensitive and excitable. Never divide the fibers of the muscles when grasping or squeezing, and be very careful to relax the grip of one hand when the grip of the other is at its height. Both hands must work in perfect unison. Continual practice is necessary to get this rhythm if you expect good results in the sickroom.

All forms of percussion are usually omitted in the early stages of convalescence, as are resistive exercises. The passive movements may be added cautiously. Every joint is held just above and below; both hands use traction, just enough to get an even pulling on all tendons to insure full flexion and extension without danger of dislocation of any joint, for the tendons and ligaments may lose their elasticity during the period of inactivity; and if any loose or false movements are made, some bone or ligament may easily be displaced.

After all four limbs, neck, and chest have been treated, we come to the abdomen, the most important part of the anatomy to be treated in convalescence. We know where we ought to find the different organs, but often the stomach and transverse colon are so relaxed that they become very much displaced; consequently, these need

very careful handling. An x-ray picture is a great help to the masseuse.

With the patient lying flat on her back, head raised and the knees slightly flexed, and with a pillow underneath the knees, the masseuse should be standing on the right side of the patient. She should reach over and with the full right hand placed over the floating ribs on the left side, gently press against the floating ribs and slightly under them, so as to get the outer curvature of the stomach in the palm of her hand. Slowly pull the stomach forward, slanting up toward the sternum. The pressure will be carried along the entire stomach, or outer curvature from behind to the pylorus. Several of these strokes should be sufficient at first. Follow with a few vibrations. Also with the flat full hand vibrate continually from behind forward. This is to stimulate the peristaltic action to cause the digestive agents to be mixed with the food as it enters the stomach from the esophagus at the cardiac orifice. As all the parts are weak, no force should be used, only just enough pressure to stimulate and start the machinery going.

These movements on the stomach often result in creating an appetite or slight desire for food. Certain prescribed light diets can and should be administered with advantage.

When the abdomen is so thoroughly relaxed, none of the organs work normally, and there is sure to be more or less bowel inactivity. On the

bowels the stroking must be from the beginning of the ascending colon, along the transverse, and then down the descending colon to the sigmoid flexure, as previously described. Lighter stroking will, however, give better results. The abdominal muscles will all be weak, and the colon can be reached much more readily. Be careful not to push the transverse colon farther down; instead, try to locate it, and in so doing get the flat hand under and press into position while stroking. At the sigmoid flexure use a little extra pressure as you endeavor to reach under it to raise it into position while pressing inward and backward. This little upward and backward movement of the sigmoid flexure should be a continuation of the previous movement and not a separate motion.

Light, gentle vibrations over the entire abdomen are very advantageous. When the walls of the abdomen are all weak, omit pronounced pressure which will reach to the abdominal aorta and cause a sinking and very disagreeable sensation without any real gain and may alarm the patient.

Do not expect that this slight abdominal work will cause the bowels to act at once and freely, for an immediate response is rare; it only stimulates and helps to build up the health and strength of the weakened intestines. Massage does not perform miracles, but it does help at a critical time.

If the patient has reached the stage toward recovery when she can be safely and comfortably turned over, this should be done, and she should be arranged as for general massage. It is not advisable to give all the different movements at one treatment on the convalescent patient.

Each individual patient must be studied separately. No two can be treated alike. Some require a longer treatment, some a shorter; some need decided stimulation, but most respond best to the soothing strokes and to all slow, even work, especially that given on the back.

First prepare the back with effleurage, from the end of the spinal muscles to the occiput. Do not put pressure on the ridge of the spine; this may hurt and be uncomfortable and will gain nothing. Both hands are held flat; each continues out, strokes and pulls the muscles from the neck to its nearest shoulder. Begin to draw the heels of the hands together while rubbing the large back muscles down to the coccyx, both hands together. Repeat three to six times. Then with both hands held flat on the surface begin the kneading with all of the cushions of both hands. Alternate both movements and use of hands. Never lose touch with the surface, keep the fingers extended, and by a relaxing and corresponding gripping motion, rhythmically performed, a soothing, wave-like motion will be produced. Without changing the position of the hands, change to a wringing movement. This is

Fig. 12. Shows position of patient and masseuse for most of the massage of the back.

accomplished by both hands facing each other. The one on the outer side of the back pulls toward the center, while the opposing hand pushes the mass away from the spine. Stand at the side of the patient slightly above the shoulders, so that the pressure will be greatest over the intercostal muscles. As the two hands pass each other, the muscles will be thoroughly squeezed and stimulated. This movement is very soothing for a tired back, whether produced by lying too long in one position or from overstrain.

The rolling-kneading can now be added. This is a combination of deep kneading, rolling and wringing, done with the heels of both hands over all the large muscles of the back, and a rolling of those same muscles between the bones and the hands.

Place both hands at once on the side of the back away from the operator, the heels resting firmly, directly over all the spinal muscles lying in the groove on that side of the spine. Get the whole mass of the two hands acting as a whole. They should cling to the back; the fingers should point under the arm, but they must be supple enough to conform to every change in the formation of the back, as they slowly cause the muscles to move over the bones in a circular manner. The heaviest pressure is directly over the nerve ganglia, along the sides of the spine. Continue this movement up and down very slowly, one side of the spine at a time. Then without losing the

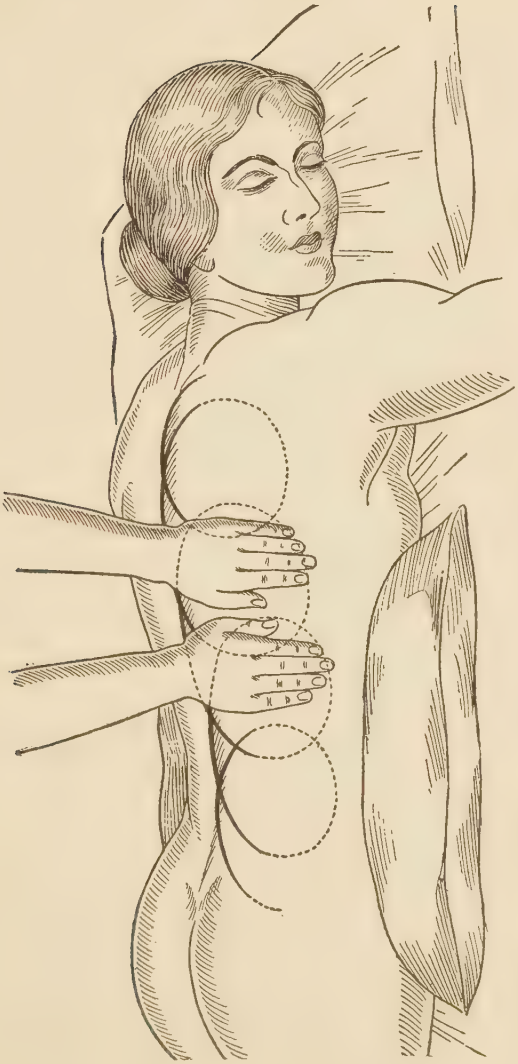


Fig. 13. Describes the rolling-kneading movement as a sedative.

rhythm, let the hands glide over to the opposite side of the body, and repeat the work. This change of position of the hands will bring the massed fingers over the spinal muscles. The pressure will then be exerted by the massed fingers. After this much is done, it is usually advisable to confine the work to stroking. Place first one hand over the muscles on either side of the spine, keeping the fingers and the thumb together to form a soft, heavy but pliable cushion. Let the right hand do the work on the right half of the back, but near the spine the left hand can do the left half. One hand starts at the occiput. Relax the hand to make it heavy, drag it slowly down the full length of the back to pull and stretch the muscles. When about half way down, let the other hand take up the work on the other side of the spine at the occiput, in the same manner, so that the two hands by working in unison will make one continuous pulling and pressing movement directly over the muscles and underlying nerve ganglia. As one hand is finishing the stroke, the other is beginning to stroke.

This movement when properly performed will invariably cause even the most restless person to go to sleep. The sleep gained by this method is far more valuable than that induced by narcotics, for narcotics deaden the nerves temporarily and give a respite from pain or overstimulation; whereas massage soothes the nerves with pressure and stretching, and by putting the muscles

into action, stimulates the blood circulation without calling upon the depleted nerve force of the patient. In turn these muscles by the contracting and relaxing movements cause the

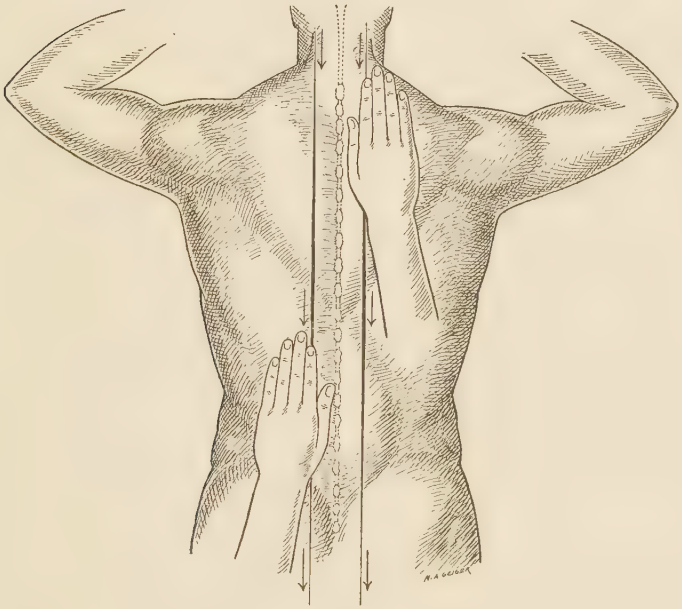


Fig. 14. Stroking the back.

venous blood to be pumped more steadily back to the heart, and the lymphatics take up their duties and get rid of the waste through the tissues to make way for the fresher blood circulation; all of which aid in better nourishment. Upon awakening, the patient feels refreshed.

For massage in convalescence, a lubricant is desirable. Almost any oil will soften the hands of the masseuse and the surface of the patient's skin, but experience has taught that cocoa butter, cocoanut oil, sweet almond oil or Evanola gives the best results. Any of these oils helps to supply nourishment to the skin, which, when warmed by friction, causes the little absorbing agents to suck it up with profit to the skin. At the same time, the warmth and friction cause the pores of the skin to open, and, as they are minute excretory organs, they help to rid the skin of waste.

In extreme cases of atrophy, it has been found that crude cod liver oil is excellent. Keep the cup of oil in a basin of very hot water at the bedside, and use as much as can be absorbed by the glands under the arms and by the groins especially. The odor is disagreeable, but the results are sufficient to balance that point.

CHAPTER XVIII

HEADACHES

Those headaches which are caused by malnutrition or physical and nervous exhaustion can be relieved and soothed by head massage. In all

Fig. 15. Friction on the forehead.

such conditions the massage is applied to the head, either with or without general massage of the body; but when possible the back should be treated as well as the head. Use routine stroking across the forehead, with the cushions of the

hands, and follow by friction with the balls of the finger ends describing small circles, overlapping each other, slowly, with only enough force to cause the scalp to roll gently over the skull. When the patient is placed in a comfortable position, the whole of both hands can encircle the head, and all may work in unison to soothe the nerves and cause sleep. Every motion that is made will cause a squeezing out of the venous blood and create a corresponding inflow from behind. The new flow of blood through the neck helps to nourish the brain and nerves, as well as the skin. The relief is pronounced, and the entire body will relax.

For those conditions which call for lessening of the supply of blood in the head, where the nurse has been trained to put the patient's feet in hot mustard water, we will place our two hands behind the patient's ears, one hand on each side, directly over the sternomastoid muscles, and stretch the muscles down in line with the fibers of the muscles to the clavicles. Both hands stroke together directly over the jugular veins with their branches. We thus have four large veins by which to draw the blood away from the head. This is the strongest derivative movement known and can be used in an emergency. Be careful to avoid the trachea while keeping in close touch with the entire front of the neck. By a slight twist of the wrist, allowing the thumbs to overlap one another, we

avoid pressure over the trachea or wind pipe and prevent a choking sensation. Follow by friction over the entire head, adding a little percussion of the finger balls to get freer circulation of blood in the head to break up congestion. Then follow with the downward stroking of the sterno-mastoid muscles to draw away more of the blood. In these cases finish with the downward stroke. No hard and fast rule can be recommended as to the number of strokes or the length of time needed. Each case must be watched and treated according to the response shown. By watching the light in the eyes and the color of the face, we will receive our instructions and know when to stop. The eyes will grow dimmer and the countenance paler.

Neuralgic headaches are very common. When they are caused by defective teeth, the dentist should be consulted; when by the eyes, the ophthalmologist, and so on; but when such headaches are from lack of rest or from being caught in a draft, we can usually expect direct and immediate relief from massage. Proceed as in conditions of nerve exhaustion, adding nerve pressures over motor points, such as those easily located in the eyebrow, either side of the bridge of the nose, and in front of the ears. Use pressure at the base of the skull on both sides of the neck. Do not use percussion or rapid movements. These instructions are for general conditions. Diseased and organic troubles must be studied separately.

CHAPTER XIX

CHRONIC CONSTIPATION

An x-ray photograph of the abdominal viscera should be obtained before beginning massage treatment, and it should be studied to ascertain the exact locations of the several organs and to determine the presence of any malformation or obstruction in the body which may cause the chronic condition of constipation. Use vibrations instead of percussion, except when other and stronger exercises are called for. Abdominal muscles are strong, but they always shrink from violent or sudden approach and will contract immediately to protect the contents of the belly upon the first intimation of harm. Try coaxing instead of force.

Prepare the sufferer by placing him on a bed or couch, without springs if possible; raise the head with an extra pillow; flex the knees. When the patient is thoroughly relaxed, the masseuse should oil her hands. Stroke the transversalis muscle on both sides toward the umbilicus slowly and rhythmically with alternating strokes to relax the abdominal walls. Encourage the patient to breathe deeply. Stroke the ascending colon

upward, then stroke across the transverse colon, and down the descending colon to the sigmoid flexure. Stand on the left side of the patient; firmly grasp the entire abdomen by placing the left hand just below the liver and floating ribs on the right side; hold the entire mass in position with the aid of the left hand, wrist and arm; then with the right hand bent into a loose fist with the thumb inside, the hand starts with a twisting, rolling and pressing movement with the back of the doubled right fist, from the splenic flexure down the descending colon into the sigmoid flexure, where extra pressure is made upward and inward to try to break up the obstruction. This need not be really painful if the fist is relaxed and also the patient. The abdominal contents are held in position by the left hand and arm, while the right fist does the kneading.

Several of these movements can be performed and also the routine work, previously described, followed by wringing of the entire abdomen and then by deep vibration. In extreme cases of obese persons only, pounding with the clenched hand when administered from a relaxed wrist may be called for. In addition to these abdominal movements, it is advisable to give kneading and wringing on the lower back muscles and on the buttocks, followed by resistive exercises of the lower limbs.

Obstinate contipation of long standing may

take an equally long time to overcome, since the colon and all the muscles have lost tone; the colon has relied upon cathartics and enemas for results. Both the colon and the muscles need to be re-educated and strengthened.

CHAPTER XX

BREASTS

Massage of the Breasts in Maternity Cases

Opinions vary as to the advisability of using massage on the breasts at any time, and especially in the early stages of motherhood. Some doctors are very positive never to allow any handling whatever under any circumstances; others wish it and use it advantageously to relieve the pressure and weight in the overdistended breasts in the early stages to prevent the caking of the milk in the breasts. One doctor advised his nurses to strip the breasts, just as if they were stripping a cow's udder [his words].

More than a decade ago a nurse was told to "just maul the breasts around for a while" in a case of badly caked breasts.

When there is such a variety of opinions expressed on this subject, it shows fully that some definite mode of procedure needs to be studied and worked out.

Colostrum may be present in the breasts for several weeks prior to delivery, but true milk is expected to appear in the breasts about the third day after delivery; frequently it rushes in quite

suddenly and engorges the breasts, causing distress. The breasts become very large and heavy, especially under the arms. The woman is then decidedly uncomfortable and more or less

Fig. 16. To soften the breast.

feverish. The baby is put to the breast of course; although the first feeding is light, still it relieves that one breast. What about the other? I am not attempting to underestimate any of the methods at present used; they all have been

tested and have their good points. My province is to place before you the methods that have proved of value with massage as experienced in my own practice.

The mother is sure to protest against massage, for she knows she cannot stand any rubbing, and almost everybody thinks of massage in terms of rubbing or kneading, and consequently every mother will vigorously resent all rough handling, and rightfully too.

When relief is needed on a full, distended breast, not caked, gently but firmly place both full hands over it, around the nipple, but leave the nipple free. Then first with one thumb gently press with the cushion; start lightly near the nipple, then press with one finger at a time, one after the other, until all of the different soft cushions of both thumbs, all fingers and even different muscles of the hands are all working, shifting the pressure from side to side and all over the breast. Never lose contact with the surface even when the breast is very large and the two hands will not cover it all at one time; then the position of the hands must be shifted so as to soften up the entire breast. In some instances this graded pressure will be sufficient to give relief, and the oversupply of milk will ooze from the nipple and keep the breast soft and relieve the pain. But if the relief is not sufficient, then use one hand, cup-shaped, at the base of the breast, under the arm to support the breast; the

other hand also held cup-shaped begins at the base a little beyond the first hand, and start effleurage in a circular sweep toward the nipple. Keep the second hand inside the first, but do not

Fig. 17. To express milk.

touch the nipple. Both hands can change positions with a single gliding motion, without losing contact with the breast, until the whole area has been covered and the breast softened and relieved. Hot lard will give better results in such

cases then any other lubricant so far used on the nurse's hands. A soft piece of flannel can be dipped in the hot lard and placed over the entire breast to keep it warm and soft. Of course, oiled silk should cover the greasy flannel to protect the clothing, as well as to aid in retaining the warmth. The other breast should also receive the same care to keep up the fresh secretion of milk to prevent caking.

This all sounds very simple and easy, but the care of the breasts is not such a simple matter after all. In fact, they need constant vigilance during the first few days or until the natural supply and demand has regulated itself.

Even where care has been exercised, we sometimes find that small cakes have formed; the worst cakes will be under the arm, the next worst below the breast, as the weight of the overloaded breast may interfere with the circulation. When a cake has been formed, let the nurse support the breast with both of her hands, then start stroking gently with the balls of both thumbs between the cake and the nipple, then away from the cake in all directions. As the cake diminishes in size, the pressure can be increased until there will remain just a very small lump like a pea, which seems to slip and slide away. When that stage is reached, friction with the massed cushions of the four fingers can be used to dissolve it. Repeat these movements over each individual cake until all have disap-

peared, then begin to pump out the stale milk. It is not advisable to let the baby nurse the milk that has suffered chemical changes. It may sicken the child.

Both hands can be used to express the milk, using them as previously described, beginning at the base of the breast with both hands held cup-shaped and gently stroking toward the nipple, but avoiding the nipple. Sometimes this prolonged working on the breast to disperse the cake before any abscess can form may have so exhausted the mother that it is advisable to use the breast pump to draw away the stale milk. The breast pump will get rid of the milk very thoroughly and quickly and is often best in an emergency, but that very factor of doing the work so well and forcefully acts directly on the nipple and by its suction pulls the nipple out and tends to irritate it and make it sore.

It is hard to conceive of any greater suffering for the new mother to endure than that caused by being obliged to nurse her child while suffering from sore nipples.

At the present time the electric breast pump is being extensively used in preference to the hand pump and other methods.

The electric breast pump does its work quickly and thoroughly, but in some instances it has seemed to be too thorough and has caused a lessened secretion and consequent rapid drying up of supply and soon total loss of milk. Time

and experiments will settle this question. It also seems pertinent to doubt the advisability of tight binders on the nursing mother; they do lessen the excessive secretion. It is one of the methods used to dry up the milk when the baby dies or when nursing of the child is undesirable for one reason or another. It is reasonable to suspect that tight binders may restrict the continual secretion of milk for the full nursing period.

Sore nipples are the bane of many new mothers, and methods of prevention should be adopted as early as possible. When the expectant mother first appeals to her physician or nurse, she should be instructed how to prepare and care for her breasts.

In this generation and age all young people are taught to care for their bodies by open-air exercises, games and different athletics to insure perfectly healthy men and women, but who has thought about the girl's breasts, especially the nipples? It is felt to be immodest to even think about them, much less to examine them and make sure that they are properly formed. The result is that we find numberless women with inverted or perfectly flat nipples. When the time arrives for the mother to suckle her young child, the nipples crack. Here is one means of prevention. Lay aside all false modesty; let every mother examine her daughter. Failing that, the nurse or the doctor must do so when called upon

for advice regarding approaching motherhood. The young woman should be instructed to take her nipples between her thumb and fingers and gently pinch and roll them, one nipple at a time. Use an oil to soften the surface and to prevent any bruising, but do not use an astringent, for astringents only harden the surface and cause the skin to crack much more readily, whereas oil softens and gives elasticity to the skin and so permits of more action and lessens the chances of irritation. A few of these rolling and squeezing movements will soon cause the nipple to pout and become more prominent, and the young woman will be surprised at the rapid response; but she is likely to be disappointed just as quickly to see the nipple resume its previous state, perhaps even before she has finished her conversation with the nurse. She must not be discouraged; it will need many applications of rolling and squeezing before the full development is accomplished. We must not expect the nipples to become perfectly formed after a few minutes of care and attention. They will need long and continued care.

When the tendency of the nipples is to recede, prenatal care can be administered to develop them, thus preventing much suffering of the mother later on and making possible the breast feeding of the child.

Occasionally the breasts themselves need to be developed. Then they can receive effleurage,

first administered by the cushions of the flat fingers, from the base of the breast to the nipple. This gentle rubbing motion must be very light, followed by friction of the same soft cushions of the fingers. Slowly describe small circles from the base to the nipple, one circle overlapping the previous one, slowly, gently, rhythmically and *without* much pressure. Very great care must always be exercised so as not to bruise, for many cases of carcinoma have been traced back to rough, uncouth handling of the breasts during the childbearing period. This light, gentle effleurage and friction are stimulating to the functions and greatly aid physical development and also cause greater secretion of milk later on when it is needed.

Many doctors refuse to have massage used on full and distended breasts, even by a trained nurse, because they argue, and justly so, that massage is stimulating. When only light, superficial effleurage and friction are used, frequently and only for a very short time at each application, it is stimulating and does increase the flow of milk. Friction is used around and over hard lumpy places. The hands should be oiled with hot lard. These lumps disappear. When it is desirable to strip the breasts entirely to dry up the milk, a longer period of time will be devoted to the treatment, and hot camphorated oil or belladonna can be used in conjunction with tight binding and lessening of all fluids to the patient.

The breast pump may give much quicker results and in an emergency may prove of greater value.

Much more care and study should be given to our young women, for we Americans do not or cannot make good mothers. We are not all deficient in maternal instincts—it is often a case of inability. The late Dr. Weir Mitchell studied this defect, and he left a short treatise to us on the subject, called *Wear and Tear.*

The present fashion for our young girls, developing into womanhood, to wear the tight brassieres to restrict the development of the breasts is very harmful. Many are too young to know what they are doing. They follow the fashion only to look like one another, not realizing that the lack of bust in a woman is a defect to be deplored. Breasts should be supported but not compressed.

It is unwise to allow heavy breasts to drag and shake with violent motion. The original corset was designed to support the breast but not to restrict its normal development, as many of the brassieres do today. A breast support, designed to hold the breast without restricting its normal development, is much needed along with training of all young women, teaching them that motherhood is a far nobler career than that of any other calling.

One example never proves anything but may sometimes serve as a guide. A little woman who was not to nurse her baby for very good reasons,

had her breasts strapped down by the doctor himself. He used belladonna plasters and very tight binders to try to keep the milk from entering the breasts. No matter how tight binders may be, they cannot prevent the secretion of some milk. Of course all liquids were denied the mother. At the end of eight hours after the first appearance of milk in the breasts, the doctor had the nurse remove the binders and empty out both breasts with massage and hot camphorated oil. They were then strapped down immediately with belladonna plasters and tight binders. This was done three times in twenty-four hours and once a day after that for one week. That mother had no further trouble then or since. She is a woman in middle life now and perfectly normal.

Several years ago a doctor, in giving an address to nurses graduating from a maternity hospital training school, said in part something like this: "You young women have chosen a noble profession, and I want you always to remember to be kind, gentle and loving in every instance. Do not forget that the queen in her castle and the woman from the gutter are both on an equal level, during the supreme moment in her life, when she is bringing into the world another little soul. If it happens to be the woman from the gutter, it is not your place or mine to criticize. We do not know what caused her to get there, and if a little loving care and kindness are shown her then, it may mean the

turning point in her life and cause her to become a good woman and mother."

Among primitive people and in outlying districts in our own country where skilled care is unobtainable, young puppies have been used to draw out receding and undeveloped nipples and have successfully relieved the woman and have prevented the caking of the milk in the breast, since the puppy is stronger than a newborn baby, and he is more determined to get what he wants.

CHAPTER XXI

ORTHOPEDICS

Orthopedics is too vast a subject and entirely beyond the jurisdiction of the nurse, for it requires a knowledge of anatomy as thorough as that possessed by the surgeon. Where he specializes with the knife, the masseuse specializes with her hands to repair the loss of muscular action, to counteract the loss of power in the nerves, muscles, tendons and joints, and to prevent ankylosis. Only a few general principles will be touched upon in this little book.

After broken bones, effleurage should be used above and below the break, not over the break at first, care being exercised not to disturb the bones, as the union might be interfered with. Effleurage and sometimes light friction with the finger cushions will ease pain, soothe the sensory nerves, and stimulate the knitting process by nourishment of the surrounding tissues. It will also stimulate new tissue growth around severe burns. After splints, casts, bandages, and all restrictions have been removed, regular massage is given gently and slowly at first. As tenderness slowly disappears, the masseuse using

deeper friction with the balls of the finger tips can press into all the little spaces around the injury to lessen swelling, prevent adhesions and contractions, and break down those that have developed during necessary inaction.

While much of this massage must cause intense suffering, the masseuse always endeavors to get results with as little pain as possible. The technic here is essential. In contractions do not press upon the contracted tendons; never jerk; always support the member as near the seat of injury as possible, one hand above, the other below. Grasp the joint with straight fingers, not with the finger tips; then slowly and firmly pull or press against the shafts of the bones with as much strength as is needed or can be endured.

While pain may be severe in many instances, it will not cause any dislocations elsewhere or snap any other bones or wrench nerves, which might set up fresh inflammation in muscles or nerves.

To counteract contractions or adhesions or to prevent ankylosis, every case must be studied and treated individually; no two cases are alike; each presents a special problem according to the extent of injury to the bones, muscles, tissues and nerves. Nerve injuries are the most serious and complicated. They are often a serious factor in bone and muscle injuries and should be a study in themselves. These call for the most careful handling, combined with a comprehensive knowledge of anatomy of the entire human

mechanism, supplemented with that of possible pathologic conditions likely to follow certain injuries.

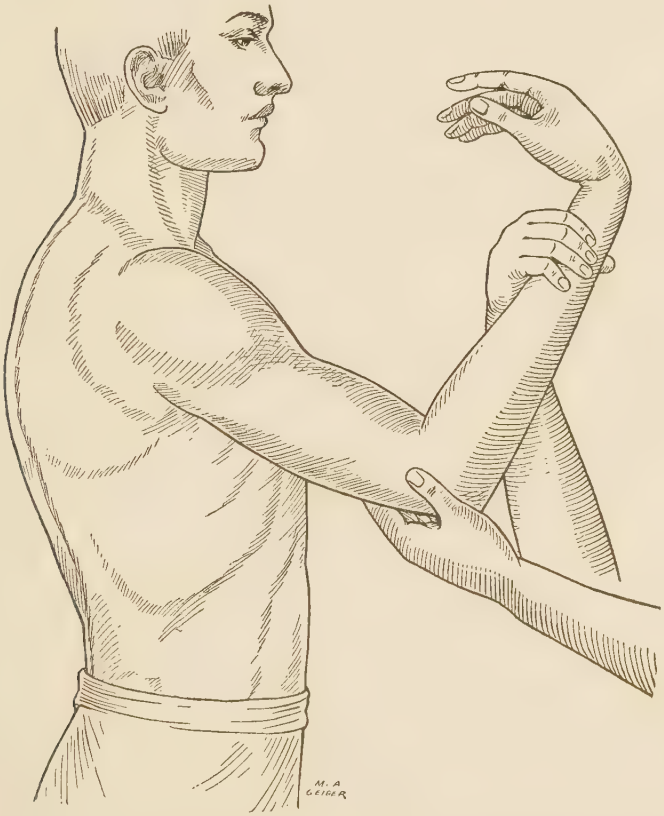


Fig. 18. Shows proper manner of holding arm to flex or extend the elbow.

The best results are being obtained from manipulations by the trained, supple hand, aided

by heat, water, electricity, time and perseverance of both sufferer and manipulator, and sometimes aided by machinery. No machinery has yet been invented that can be depended upon to do better work than that done by the human hand. Again, no hard and fast rule should be formulated as to the exact length of time for each daily, sometimes twice daily, treatment. Often short but frequent treatments yield the best results, as the nerves and muscles are not exhaused by short treatments, and stiffness is prevented. The exercises are divided into three general divisions. The passive movements are those performed upon the subject by a second person; the patient receives and gains by the exercise done for him without any expenditure of his own nerve force. The active are those motions performed by the patient himself. The resistive movements are those performed by both parties, each against the other.

Gentle rubbing is not massage in such cases and is of no real good, as it is only superficial and merely soothes the sensory nerves.

Structural spinal curvature calls for massage of all the muscles, large and small, deep and surface, with a comprehensive knowledge of exactly which muscles are exercised in each movement, so as to treat more definitely the weak ones and not exaggerate the action of the strong ones. Specially trained men and women are needed for such work. Dr. Monnell of England

says "that the six months' training usually given to massage is inadequate". Massage is a very valuable aid at the right time and needs study and care. Any method capable of good can be equally harmful when ignorantly applied.

CHAPTER XXII

BABIES AND CHILDREN

Babies prove good subjects for massage. A very young child can almost be remodeled if it is massaged while the little bones are soft and tender, when they are hardly more than cartilage and before the child can put any force or strength into its movements.

The newborn baby is frequently injured at birth by the pressure of instruments or by other pressures if the child is large. The massage should be begun as soon as the defect is observed. Do not say the child is too young. It is never too young to grow, and as the developed members grow from the very start of life, so soon will the defective members deteriorate. If only the general opinion about massage were not so perverted, we might expect a greater use of these movements, but when the feeling exists that massage always requires strength, no wonder the baby is protected against harsh, forceful work and allowed to develop one-sidedly. In life there is no standing still; if the child is not growing, it is losing ground.

The most common injuries are on one arm. The child is bathed and has to be handled. When

this is taking place, the defective member can be put through each movement that is given to the strong side, and a few gentle frictions on the weak muscles can be used without pressure or hurting. The youngster may cry, but that is usual anyway, for it protests against any handling; it wants to be left alone to sleep, and the cry need not mean that it is suffering. Watch what voluntary motions the baby makes for himself, and let the nurse make those same movements on the defective limb. Some will cry out "but that is not massage". It is under the circumstances, for it is just as necessary to know how little to do in a given condition as it is to know how to do the work.

Babies who are not nourished well can often be stimulated by light effleurage directly over the stomach. I mean the stomach, not the belly, which may be so small that the nurse's hand will cover the entire abdomen. Lightly stroke with the cushions of the fingers held flat over the stomach, and slightly under the ribs from behind to the pylorus. Two or three of these light stimulating strokes, just ahead of each feeding, will aid digestion. When the baby's bowels fail to move regularly, place the full hand over the abdomen, start the pressure with the heel and the heavy thumb muscles of your right hand, send the impulse from the heel to the thumb, and finally press the massed fingers, first along the ascending, then across the transverse colon and

down the descending colon to the sigmoid flexure. The one hand of the nurse will in this way stimulate the entire colon, without distressing the child. Often the hand is lubricated with castor oil. Every one knows that gentle patting of the back relieves gas or colic.

Different deformities can be and have been corrected in many instances with massage, while the little bones are soft.

Alternating casts and massage are one of the successful methods used with young children by some surgeons for club feet and other structural deformities. The weight and constriction of a cast or brace tend to retard growth, although they are needed to correct a structural defect. At regular intervals the body of the child is relieved of this weight and restriction. Massage is administered during the rest period and good results are obtained.

Infantile paralysis is a curse to many babies, as well as to older children. Massage is the best known remedy. All passive manipulations and exercises must be given to the child. Do not make the mistake of giving a long treatment. The best results are obtained by frequent and short treatments. Those children who are old enough to understand and follow directions can give great assistance by being taught to cooperate in the exercises used in muscle training.

A three-year-old baby girl, weighing fourteen pounds, was brought into one of our hospitals.

She had been born prematurely and had been an incubator baby. She had grown in height and had all her teeth but could not talk, walk or make any voluntary movement.

Her condition was variously diagnosed as a case of malnutrition or one of glandular trouble. A third suggestion was spastic paralysis, because all four limbs were flexed and attempts to straighten them caused severe pain indicated by both expression and cry. Handling of any portion of the body at any time caused agony. Massage was suggested, at first very superficially, both on account of the great sensitiveness of the baby's body and because the nurses did not feel competent to do what was needed, but they persevered under further instruction and love for the baby, and the child began to improve at once. Later Alpine light was added to the massage. In about ten weeks the child had improved noticeably. She gained over nine pounds, played "patty-cake" and all the little tricks of a six or seven months' old baby, laughed and tried to talk, and kicked the nurse if she happened to displease the baby. This proved conclusively that there was no paralysis of any nature, and the sensitiveness had disappeared, except at times a very little at the end of the spine. She would hold the nurse's hand and get onto her feet and stand and bear her own weight. The child was then taken home.

CHAPTER XXIII

RHEUMATISM

The term rheumatism is a voluminous cloak. It seems to be used to cover nearly every ache and pain that the flesh is heir to, which cannot be accounted for otherwise; consequently, it is useless to try to say that massage "cures" rheumatism. In many instances, in fact, in almost every instance, massage will benefit if not actually cure muscular rheumatism. Apply effleurage, first lightly, then increase in weight and force, followed by pétrissage or kneading by whichever cushions of the fingers or hands fit the special area, increase gradually but steadily and thoroughly, on, over, in, around, and among the muscles and their insertions. Follow by passive movements, succeeded by resistive. These movements will be more or less painful, but they give results. First, the venous blood is pumped to the painful area by the kneading of the muscles. This is a squeezing exercise which forces the blood forward and in turn causes a suction of blood into the emptied veins. The lymph is also stimulated to carry off more of the waste products. New blood carries warmth to

the tense muscles; they are then relaxed by the warmth. When the exercises are added, all the stiff muscles are pulled, and the result is the relaxing of them.

In inflammatory, acute, articular rheumatism and in every case where there is pain, heat, or swelling, omit all massage until the acute stage has subsided in the affected part, but frequently derivative strokings will draw the blood away and relieve the pain, and in some instances pétrissage in adjacent areas is a grateful movement. Massage should then be administered to remove deposits, to limber up the muscles and tendons, and to prevent ankylosis, to a complete restoration and functioning of all agents concerned.

Arthritis is often classed with rheumatism. As it is a disease that even yet baffles science, no positive statement can be given. Occasionally a sufferer is greatly benefited by massage and may get well enough to resume normal activities without suffering. Such being the case, it is sometimes advisable to try it, for even slight relief is a blessing, and occasionally the relief continues indefinitely.

Neuritis, according to many, is another form of so-called rheumatism. In the acute stage, nerve pressure and nerve stretching may relieve, but the work must be very carefully and accurately performed, or the increased pain will be unendurable. No massage, such as effleurage,

pétrissage or any of the active movements, can be given during the inflammatory stage. Later on, long, slow, deep stroking can be added and then deep, firm kneading with the largest muscles of the hand on that portion of the body needing attention. Do not allow the fingers or thumbs to exert more pressure or to grip harder than the opposing portion of the hand used in kneading. In other words, the gripping must be firm and even.

The attending physician should always diagnose before the masseuse starts to massage any so-called case of rheumatism. Each condition calls for a different handling. Until that fact is understood, massage will not be accepted generally.

I saw a case of arthritis deformans in a woman who was in the early thirties. She was semiflexed in both knees and arms, her back was bent, and she was unable to feed herself or to rise from or to sit down on a chair without help. Massage was tried daily for four months; then she was able to resume her ordinary duties and later returned to her former occupation, and lived for at least thirteen years, able to earn her living all that time. I lost sight of her later.

CHAPTER XXIV

EMERGENCIES

As the Boy Scouts are taught to apply a tourniquet to save life in an emergency, so should all physicians, surgeons, and nurses be taught some massage to be used when their familiar aids are not handy. We always have our hands with us; we cannot always have hospital aid handy.

Perhaps babies can give us the first examples for emergency. All sorts of infantile troubles yield themselves to improvement if not to positive cure. Little limbs that are crooked can readily be moulded while they are soft and undeveloped, before the babies can put weight or strength upon them. For infantile and obstetrical paralysis, massage gives the best results obtainable. Even deformities have frequently been corrected. Structural spinal curvatures are corrected, bowel and stomach disturbances remedied, and some severe nervous disorders corrected.

In maternity cases massage is of value in postpartum hemorrhage. As for example, when sudden and unexpected hemorrhage develops, the nurse cannot leave her patient to go after known

remedies while she is waiting for the doctor, but she has her two hands with her and her patient before her, and a good strong kneading of the abdomen may cause the fundus to contract and thus stop the bleeding and save the mother's life. There is no need to fear hurting the woman, as she is unconscious of pain at that time.

Headaches caused by neuralgia and exhaustion, either bodily or nervous, can be relieved by massage of the muscles of the upper back, neck and head. Always use the cushions of the fingers or the whole hand and employ a rolling-kneading movement on the head, followed by slow, firm effleurage with extra pressure over the motor points.

Long, deep, slow, rhythmical strokes on the limbs are very soothing during prolonged periods of inactivity caused by broken and dislocated bones. Occasionally very little percussion with the fingers or friction with the finger cushions on the muscles near the injury is used to keep up the blood circulation, warmth and nutrition. Omit all movements of the joints until the bones have knit; then be gentle but firm and steady, for the stretching of the muscles and tendons will pull on them at the attachments and are liable to hinder the knitting process if begun too soon or given with too much force.

Those obliged to remain flat on the back should be manipulated frequently. Rolling-kneading is then very useful and grateful. There

is always some place where one hand, if not both, can be slipped in between the body and the bed. The pressure must be reversed, that is, press up, away from the bed with the palms against the body, and gently roll all muscles as freely as possible between the hand or hands and the bony frame. Sometimes both hands can be slipped in, and then they can wring the muscles; as one hand pushes, the other pulls the flesh. This stretches the muscles and relieves them of that strained, tired feeling, the same as when a healthy, normal person will stretch and yawn. The same principle holds good, for in such instances we stretch some muscles and relax others and cause blood stimulation.

Bed sores are prevented by keeping up the circulation around and adjacent to the tender spot and by not allowing the blood to settle at the point of pressure. For nerve pain, stretch or press directly on throbbing nerves.

Watch a man suffering with sciatica and note how he will press and "pull" over the region of the affected nerve; even ignorant people, who cannot tell why, when we ask them, know from experience that pressure and pulling offer some slight relief. The nerve is being pressed or stretched. For sciatica clench the fist, with the thumb inside and the knuckles all in a straight line; start with the straight knuckles at the head of the popliteal space. With a slow, steady, even pressure follow the nerve up into the sciatic

notch; maintain the steady pressure; do not lift the hands off to allow the nerve to return quickly to its position. Instead add the weight of the other hand to that of the first hand and slowly return to the start by gradually opening the under hand to lessen the pressure, until both hands glide off gently. This is the crucial point, the manner of releasing the pressure after the stretching, for a sudden rebound of the nerve, like an elastic snapping back to its original shape, will increase the inflammation and the suffering.

Nerve pressures and nerve stretchings are sedative. Notice how instinctively we will immediately clasp our hand and press over the painful spot and relax the surrounding muscles when we accidentally hit the elbow or funny bone as it is called.

Massage yields more or less relief in convalescence, general debility, some functional troubles and some forms of paralysis. Almost all orthopedic conditions are materially aided. Depleted conditions, after operations are benefited; stiffness and adhesions are removed and broken down; swelling and thickening of the tissues are reduced. When attempting to stretch tendons and break down adhesions, never press on the stiff tendons, as the pressure will cause extra pain in consequence of more pronounced muscular contractions and will retard the stretching of those already hard, stiff tendons and may

even set up a neuritis. When atrophy of the muscles and complete loss of power are present, be very careful to use steady traction during the passive exercise, as any uneven pulling on weak tendons may cause a dislocation of a joint.

Never give massage if a thrombosis is suspected.

Frequently we do not obtain the results we may logically have every reason to hope for, and from the same standpoint we may unexpectedly get beneficial reactions.

One of the first demonstrations to nurses, more than thirty years ago, was on a neurasthenic woman who had been in the incurable ward for two years. She was using crutches with which to walk, and she had not eaten any solid food for four months. She was very much averse to being demonstrated upon for the pupils' study. A short explanation was given to her; she was intelligent; she grasped the idea, forgot herself while the demonstration was conducted and watched and criticized the practice on both of her legs. The lesson was completed just as the dinner bell rang. The following day she told how the smell of the food had appealed to her as she returned to the ward, and she had eaten a little meat and potato. She appeared in the classroom without any urging the next day and each day thereafter for two weeks, by which time she was walking unaided and was eating the regular three meals daily. This report

appears ludicrous on the surface, for even the most enthusiastic believer will never lay claim to making a person walk after one leg treatment. There are several factors to be considered in the foregoing tale. Her interest was awakened, she was intelligent, she forgot herself, and the massage did stimulate the blood, lymph, muscles and nerves, and she returned to her room just at the psychologic moment when the odor of freshly cooked food appealed to her senses.

INDEX

A

Abdomen, effleurage on, 45
massage of, 79, 80, 81, 82, 83, 84, 85, 95, 96
vibration over, 69
wringing of, 84
Abdominal breathing, 31
vibration, 68
Abscess, 41
Adhesions, 124, 138
Anatomy, study of, 29
Ankylosis, 124
Arm, massage of, 75, 76
Arthritis, 133
deformans, 134
Articular rheumatism, 133
Athletic massage, 24

B

Babies, massage of, 128
Back, effleurage of, 98
friction of, 59
massage of, 86, 88, 89, 90, 91, 98, 99
roller-kneading of, 55, 100, 101
stroking of, 49, 103
wringing of, 62
Balfour, 22
Bed sores, 137
Bell, Sir Charles, 36, 37
Berghman, 22
Beveridge, John, 21
Binders, for breasts, 117
Bladder, vibration over, 66, 67, 68, 69
Body massage, 70
Boils, 41
Brassieres, 120
Breasts, binders for, 117
caked, 115
care of, 117
development of, 117, 118
effleurage of, 118, 119
in maternity cases, 111, 112, 113, 114
massage of, 111, 112, 113, 114, 119
to soften, 112
to support, 120
Breast pumps, 116
Breathing, abdominal, 31
deep, 31
Buckotz, 23
Buttocks, roller-kneading of, 55

C

Caked breasts, 115
Care of breasts, 117
Celsus, 20
Centripetal stroking, 17
Chest, effleurage of, 44
massage of, 79
Children, massage of, 128
Chinese, massage among, 19
Chronic constipation, 108
Circulation, 27
Club feet, 130
Colon, massage of, 80, 81, 82, 83, 84, 85, 108, 109
Constipation, chronic, 108
Contractions, 124
Convalescence, massage in, 92, 138
Copestake, 23
Cracked nipples, 116, 117

Cupping, 63, 74
Curvature, spinal, massage in, 126

D

Deep breathing, 31
Deformities, massage of, 130
Despard, L. L., 24
Development of breasts, 117, 118
of nipples, 117, 118, 122
Distended bladder, vibration over, 66, 67, 68, 69
Dowse, Stretch, 23

E

Eccles, S., 23
Education of masseuse, 17, 18
of public, 18
Effleurage, 32, 40, 41, 92
after fractures, 123
indications for, 41
of breasts, 118, 119
of chest, 44
of limbs, 42, 45
on abdomen, 45
on back, 98
on neck, 44
Elbow, extension of, 125
Emergencies, 135
Excretion, 32
Exercise, 26
Extension of elbow, 125

F

Fingers, massage of, 75
Flail, 63
Flexion of elbow, 125
Foot, club, 130
massage of, 70, 71, 72
Forearm, massage of, 76
Forehead, friction on, 105
Fractures, effleurage after, 123
massage after, 123
French, massage among, 20
Friction, 33, 40, 58, 94
of back, 59
of glutei, 59
of knee, 59
of wrist, 59
on forehead, 105
Fulling, 40, 60, 73
of knee, 60

G

Galen, 20
General massage, 70
Glutei, friction on, 59
roller-kneading on, 55
Gout, 23
Graham, Douglas, 23
Grosvenor, 22
Gymnastics, medical, 23

H

Hacking, 63
Hale, A. Creighton, 23
Halleday, 22
Hand, 36
massage of, 75
Hartwell, 23
Headaches, 105, 136
neuralgic, 107
Heart, 27
Hemorrhage, postpartum, 135
Hippocrates, 20
History of massage, 19
Hoffman, 21

I

Infantile paralysis, 16, 23, 130
Inflammatory rheumatism, 133
Intestines, massage over, 97
Inward trembling, 40, 65

J

Japanese, massage among, 19, 20
Joints, stiff, 22

K

Kleen, 23
Kneading, 40, 52, 53, 56
  rolling, 136, 137
Knee, friction on, 58
  fulling of, 60

L

Leg, massage of, 73, 86
  rolling-kneading of, 55
Light, 26
Limbs, effleurage on, 42, 45
  massage of, 136
Ling, Peter Henry, 21
Liver, massage of, 86, 87
  vibration of, 67, 87
Lovett, 23
Lubricants, 34, 104, 114, 115

M

MacKenzie, 23
Massage after fractures, 123
  among Chinese, 19
  among French, 20
  among Japanese, 20
  among South Sea Islanders, 19
  and public opinion, 15
  athletic, 24
  body, 70
  effects of, 28
  general, 70
  history of, 19
  in convalescence, 92, 138
  in spinal curvature, 126
  in Sweden, 21, 22
  of abdomen, 79-85, 95, 96
  of arm, 75, 76
  of babies, 128
  of back, 86, 88-91, 98, 99
  of breasts, 111-114, 119
  of chest, 79
  of children, 128
  of colon, 80-85, 108, 109
  of deformities, 130
  of fingers, 75
Massage—Continued
  of foot, 70-72
  of forearm, 76
  of hand, 75
  of leg, 73, 86
  of limbs, 136
  of liver, 86, 87
  of neck, 77, 78
  of stomach, 85
  of thigh, 73, 88
  of toes, 71
  over intestines, 97
  routine, 70
  science of, 25
  Swedish, 22
  theory of, 28
  Turkish-bath, 24
Masseur, 40
Masseuse, 40
  education of, 17, 18
Massotherapy, 18
Maternity cases, 135
    massage of breasts in, 111, 112, 113, 114
McMillan, 23
Medical gymnastics, 23
Mezger, 22
Milk, to express, 114, 116
Mitchell, S. Weir, 23, 33, 120
Monnell, James B., 24, 126
Movement, 25, 26
Movements, Swedish, 21
Murrell, W., 23
Muscles, 35
  kneading, 56
  training, 23
  twisting, 40
Muscular rheumatism, 18

N

Neck, effleurage of, 44
  massage of, 77, 78
Nerve, injuries of, 124
  stimulation of, 65
  vibration over, 66
Neuralgic headaches, 107
Neurasthenia, 139
Neuritis, 133

Nipples, cracked, 116, 117
development of, 117, 118, 122
receding, 118
sore, 116, 117

O

Orthopedics, 23, 123
Ovaries, vibration over, 66

P

Paralysis, 16, 65, 138
infantile, 16, 23, 130
Paré, Ambrose, 20
Percussion, 40, 63, 95
Peters, J. A., 21, 23
Pétrissage, 40, 50, 53, 94
Postoperative cases, 69
Postpartum hemorrhage, 135
Pressure, 17
Public, education of, 18
opinion, and massage, 15

R

Rheumatism, 17, 22, 132
acute, 133
articular, 133
inflammatory, 133
muscular, 18
Rolling-kneading, 55, 136, 137
of back, 55, 100, 101
of buttocks, 55
of glutei, 55
of leg, 55
Rubbing, 15, 32, 40, 41

S

Sciatica, 137
Science of massage, 25
Sides, effleurage on, 45
Skin, 35
Sleep, to induce, 36
South Sea Islanders, massage among, 19
Spinal curvature, massage in, 126
Sprains, 23
Stimulation of nerves, 65
Stomach, massage over, 85
vibration over, 66, 67
Stroking, 40, 41, 47
centripetal, 17
of back, 49, 103
with straight hand, 48
Sweden, massage in, 21, 22
Swedish massage, 22
movements, 21

T

Tapotement, 40, 63
Terms used in massage, 40
Theory of massage, 28
Thigh, massage of, 73, 88
Thrombosis, 139
Tibbits, 23
Toes, massage of, 71
Training of muscles, 23
Trembling, inward, 40, 65
Turkish-bath massage, 24
Twisting of muscles, 40

V

Vibration, 40, 65
over abdomen, 68, 69
over bladder, 66, 67, 68, 69
over liver, 67, 87
over nerves, 66
over ovaries, 66
over stomach, 66, 67
Von Mosengeil, 22

W

Water, 25
Wringing, 40, 62, 77
of abdomen, 84
of back, 62
Wrist, friction of, 58

T3-AEU-018